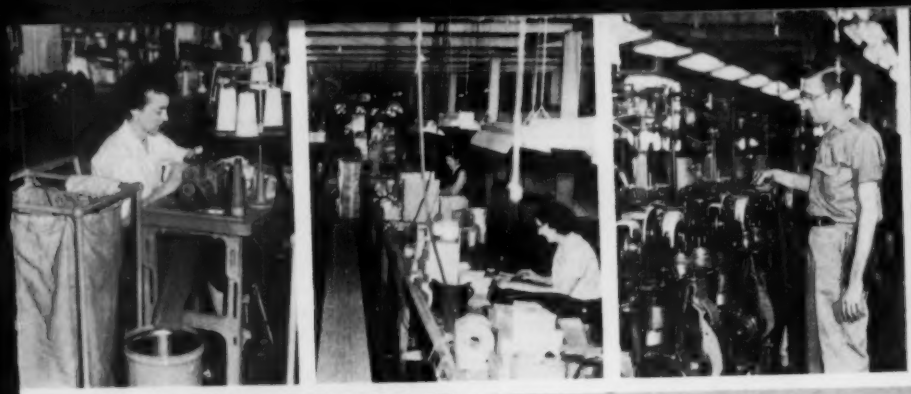
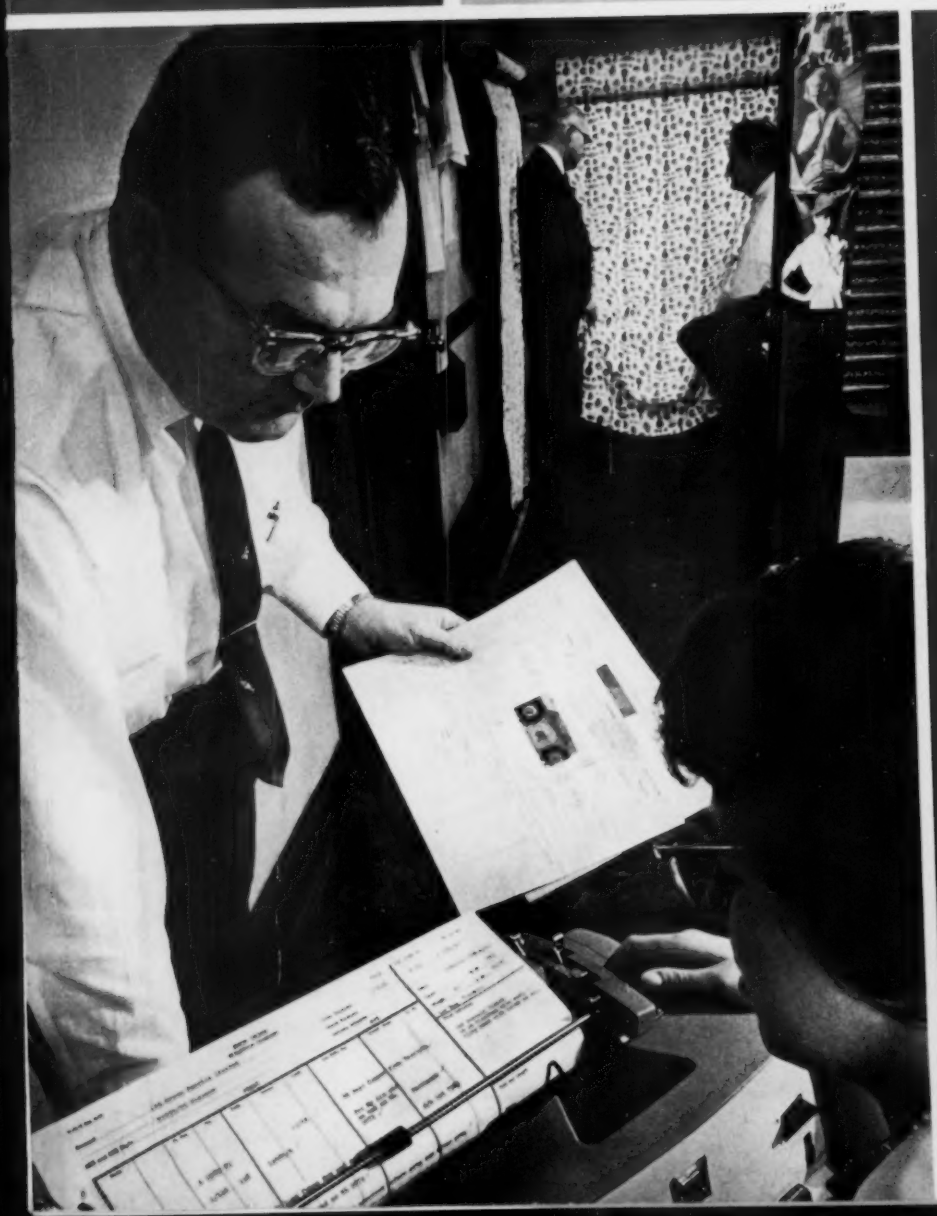


Two-Part
Success Story
1. New Methods
2. New Controls
page 62

APRIL, 1961
PRICE $1.00

A McGRAW-HILL
PUBLICATION

TEXTILE WORLD



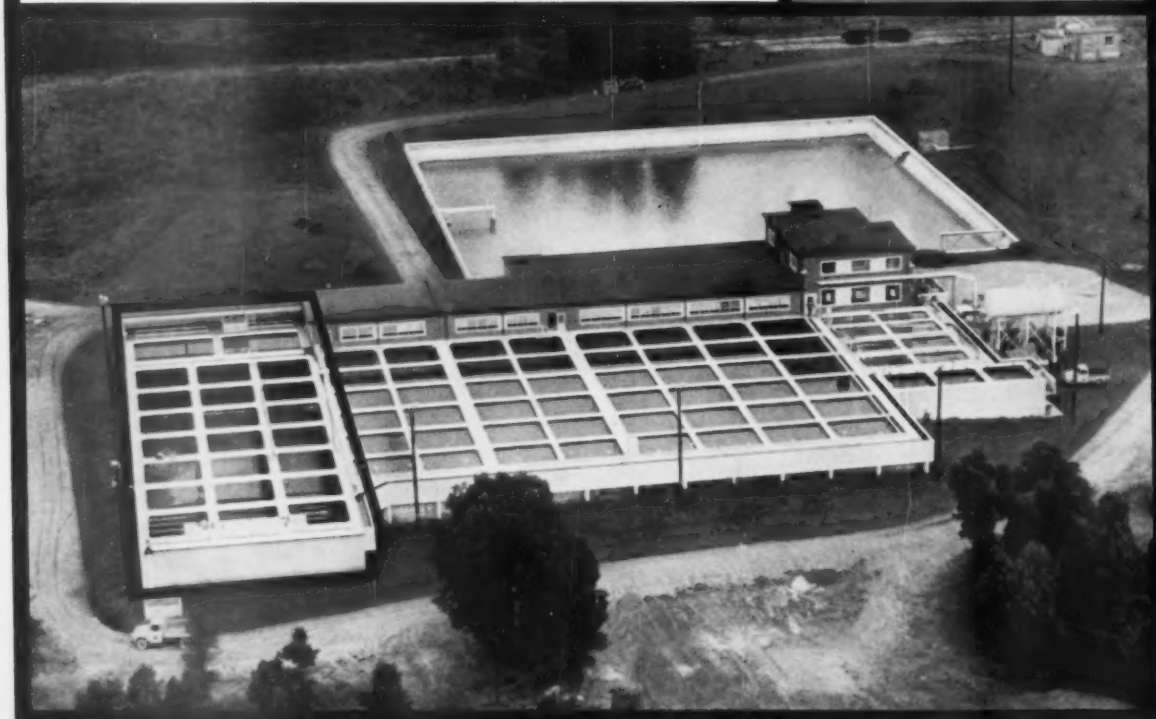
How to Hit
Office Costs
Where They Begin
page 58

Relocated
Weaveroom with
3-Way Payoff
page 78

Your Guide to
The Knitting Show
page 90

Table of Contents
page 4

SPRINGS NEEDED MORE WATER



Filters and settling basins at far left were recently completed to handle additional 5,000,000 gallons per day, bringing the total filtered water capacity to 15 MGD.

Growing demand for Springmaid fabrics increased the need for filtered water at The Springs Cotton Mills' Grace Bleachery. To meet this need Robert & Company Associates designed a 5 million gallon per day filter plant addition to bring the capacity of this plant up to 15 MGD. This is the third addition designed for this filter plant and one of many improvement projects which Robert & Company Associates have handled for The Springs Cotton Mills.

If your plant is short on water, call on Robert & Company's 43 years experience in working with leaders of the textile industry.

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

BEEBE RIVER, N.H., BOBBIN PLANT

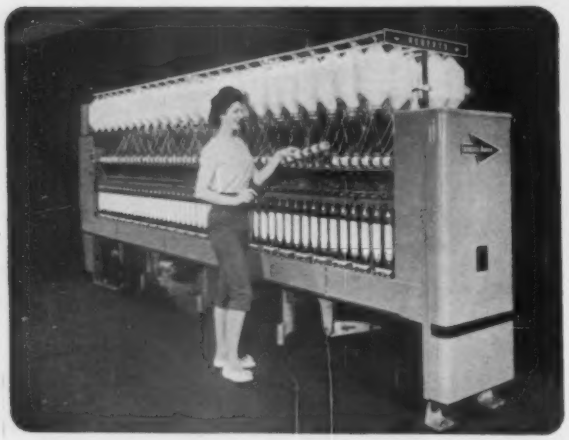
QUALITY and ECONOMY ■ Quality of product . . . economy of operation . . . are the two big reasons why Draper Bobbins are the accepted standard for excellence in textile mills throughout the world. ■ Engineered by men who know bobbin requirements . . . the use of the finest raw materials . . . consistent uniformity in manufacture . . . proven finishes . . . add up to Quality Draper Bobbins designed to give the best possible service.

DRAPER CORPORATION

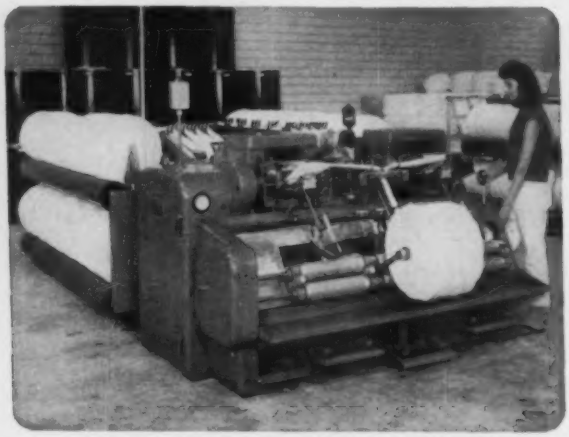
HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

ROBERTS

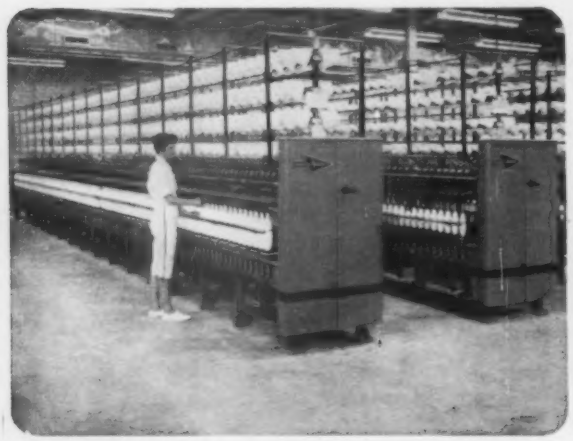
YARN MAKING MACHINERY
for Cotton, Worsted, or Long Fiber Systems



ROBERTS ARROW SPINNING for both cotton system and long fiber system yarn spinning for natural and synthetic fibers and blends. High speed, all ball bearing, big package Arrow Spinning Frames in 25-inch or 36-inch width. Exceptional flexibility and simplicity of operation in the manufacture of improved quality yarns at reduced costs and modest initial investment.



ROBERTS-TEMATEX worsted system preparatory machines, including ParaBlenders, ParaDrafters and AutoEveners, are rugged, high performance machines for pinning, parallelizing, drafting and blending worsted and synthetic fibers prior to roving and spinning, and in top making plants. AutoEvener automatically and instantaneously corrects delivered sliver weight to within plus or minus 1%.



ROBERTS TWISTERS for plying yarns are completely ball bearing equipped and designed for high speed ring twisting operations. 25- or 36-inch frames. Up to 3½-inch rings and 12-inch bobbins. Package weights 1¼ pounds on cotton, ¾ to 1 pound on worsted.

ROBERTS ROVING FRAMES are ball bearing rebuilt and feature all-new heavy duty ball bearing Roberts Double Apron Drafting Systems for cotton, short staple or long fiber synthetics, worsted and blends. 10x5 and 12x7 packages. Provisions for double headed spools.

Simplicity of design, rugged construction and high speed ball bearing operation are the trade marks of all Roberts Company machinery. Roberts also supplies rebuilt spinning frames and modernization change-overs for mills' existing machinery.

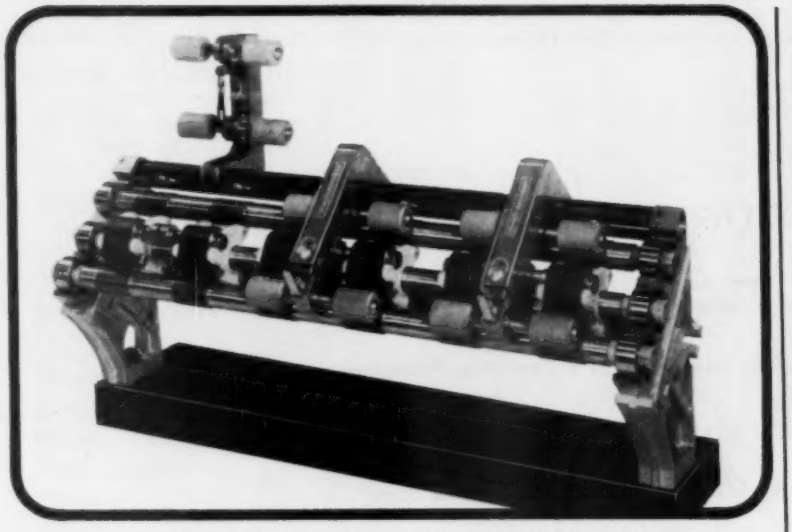
ROBERTS COMPANY
SANFORD, NORTH CAROLINA

YARN MAKING MACHINERY

ROBERTS NEWS

COTTON, WORSTED OR LONG FIBER SYSTEMS

Roberts FC Drafting System . . . Cleanest, Simplest, Best Yarn Quality



FC Drafting clears roll beam of all weighting attachments. Ball bearing bottom rolls on all three lines, shown above, are optional.

- Cleanest Running — Easiest to Clean
- Simplest — Fewest Number of Parts
- Highest Yarn Quality — Stronger, More Even Yarns
- Broadest Versatility — Cotton, Synthetics, Blends
- Short or Long Staple — Synthetics 1⅛" to 3"
- Coarse or Fine Yarns — 2s to 120s
- High Draft — 10 through 60
- Cartridge Weighting
- Roll Beam Clean — No Weighting Attachments
- No Lever Screws, Weight Levers and Hooks, Dead Weights
- PosiWate Pendular Arm Suspension — Positive Weighting
- No Oil in Entire Drafting Zone
- 3 Lines Ball Bearing Top Rolls
- Ball Bearing Bottom Rolls Optional
- Hardened Bottom Rolls with EvenGrip Fluting
- Nylon Cradles with Choice of Pin Opening
- Reduces Weight on Frame by ¾ of a Ton

ROBERTS COMPANY **Sanford, North Carolina**

Arrow Spinning Frames for Cotton and Worsted Systems • Twisters and Roving Frames
Tow-Transformers • ParaBlenders • ParaDrafters • AutoEveners

Roberts Company has achieved a most precision made cotton spinning system with its FC Drafting. It is the cleanest running, and the simplest with the fewest number of parts. It consistently gives the highest yarn quality from spindle to spindle and from year to year.

Dramatically new and improved in FC Drafting is a cartridge weighting arrangement which eliminates all weighting attachments to the roll beam, disposing of the lever screw, weight lever, weight hook and dead weight.

Used instead is an enclosed spring cartridge attached to a cartridge bar fastened between roll stands. A simple lever is depressed to unweight or to weight up the top rolls. There are no short springs inside the pendular suspension.

WIDE VERSATILITY

Coarse or fine yarns from 2s to 120s, cotton or synthetics and blends, and a broad range of drafts from 10 to 60, are efficiently handled by new FC Drafting.

Proper, efficient fiber control, fiber gripping and weight is provided without the limitations of other systems using short springs, weights or magnets.

FC Drafting can be arranged to handle short or long staple cotton, and synthetic fibers from 1⅜" to 3" long. A choice of cradle lengths and solid or recessed apron top rolls provides this flexibility.

One arrangement handles cotton up to 1⅜" long and synthetic fibers 1⅜". Recessed top apron rolls may be used for synthetics of 2" to 2½" long. Another arrangement handles regular running of long staple cotton up to 1⅜", or synthetics of 2" and less. The recessed roll extends this to 3" synthetics.

Send for Bulletin. **For further information on Roberts FC Drafting write for Technical Bulletin FC-101.**

TEXTILE WORLD

VOLUME 111, NO. 4 APRIL, 1961

PUBLISHER
Donald H. White
CHIEF EDITOR
Walter A. Stanbury
MANAGING EDITOR
Edward W. Ziegler
SENIOR ASSOCIATE EDITOR
Richard B. Pressley
ASSOCIATE EDITORS
William G. Ashmore
Robert W. Pinault
T. Benton Sevison, Jr.
ART DIRECTOR
Robert E. Wolk
COPY EDITOR
Carol Wilhelm
EDITORIAL ASSISTANT
Noreen Heimbold

Editorial:

Pending the Upturn 54

Obituary:

Henry G. Lord, Founder and Friend 55

MANUFACTURING AND MANAGEMENT

Hitting Mill Office Costs Where They Begin
Each dollar you cut from your paperwork costs will produce as much profit as $30 in sales 58

2-Part Success Story
Part 1: Better Machines, Better Methods . . . Part 2: Can't-Miss Production Control 62

What You'll Get from 1960 Cotton
The last word on the 1960 crop shows it was a good year—but not spectacular 66

Getting More from Maintenance
Here's a first-hand report on the 12th Annual Plant Maintenance Show 69

Handling That Cuts Costs 50%
Bulk storage and fast warehousing and shipping add up to across-the-board savings in handling .. 70

Quality Control 1961: The Experts Speak Out
Highlights of the recent American Society for Quality Control meeting 72

New Air Conditioning Improves Quality, Efficiency
Six new cooling-humidifying units are paying big dividends for this mill 75

A Relocated Weaveroom: Down in the Basement
How one mill went underground with its new looms—without disrupting production 78

Building and Starting a New Tufted-Carpet Mill
This mill consolidated eight small buildings into one gleaming new plant 82

What to Do About Hidden Roving Variation
Try this simple test for roving variation—and save yourself time and trouble 86

Knitting Arts Exhibition Show Guide
Complete alphabetical listings of products and exhibitors at Atlantic City 90

How to Get Better Quality—Pointers for Supervisors 131

Cost Cutters 134

CHEMICAL TREATMENT AND FINISHING

Section Contents Page 103

What You Should Know About Vat Dyeing Today—Part 2 114

Dye-Plant Modernization Pays Off 3 Ways 120

CONSULTING EDITORS
C. Norris Rubold
Leopold Licht

CONTRIBUTING EDITORS
E. H. Helliwell
H. S. Knowlton

WORLD NEWS BUREAUS
John Wilhelm, Director
Margaret Ralston, Managing Editor
Washington: George B. Bryant, Jr., Chief
Dean Reed
Atlanta: B. E. Barnes
Chicago: Stewart W. Ramsey
Cleveland: Arthur Zimmerman
Detroit: Donald MacDonald
Dallas: Marvin Reid
San Francisco: Jenness Keene
Los Angeles: Kemp Anderson
Seattle: Ray Bloomberg
London: John Shinn
Paris: Robert E. Farrell
Tokyo: Sol Sanders
Bonn: Morrie Helitzer
Moscow: Ernest Conine
Mexico City: Peter Weaver
Caracas: John Pearson
Hong Kong: Stan Rich
Zurich: Raymond Shah
Milan: Gene Di Raimondo
Melbourne: Alicja Grobtuch

ADVERTISING AND BUSINESS DEPARTMENT
Walter C. McMickle, Advertising Sales Manager
Thomas Macaluso, Business Manager
Howard J. Bernard, Circulation & Promotion

DISTRICT MANAGERS
Ralph L. Chisholm, Boston 16
Clinton H. Sperry, Boston 16
David W. Leake, Chicago 11
Patrick J. Foy, Cleveland 13
Frank LeBeau, Dallas 1
J. W. Patten, Denver 2
Robert J. Edsall, Greenville, S. C.
Joe Page, Houston 25
R. S. McGinnis, Los Angeles 17
Stokes T. Henry, New York 36
H. C. Harvey, Philadelphia 3
Thos. Carmody, San Francisco 4
Stanley Kimes, Frankfurt
Malcolm Thiele, London
M. R. Zaynel, Geneva

ECONOMIC SERVICES
Douglas Greenwald, Manager
William J. Brown, Textile World Index

MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS AND AUDIT BUREAU OF CIRCULATIONS

A McGRAW-HILL PUBLICATION

© Copyright 1961 by McGraw-Hill Publishing Co., Inc. (All rights reserved)

Postmaster . . . Please send form 3579 to Fulfillment Manager, Textile World, 330 W. 42nd St., New York 36, N. Y.

LATE NEWS

TEXTILE WORLD Late Report
Economic Indicators 19
News and Comment 20
Washington Outlook 22
News of the Month in Textile Chemicals 107
What's New in Fibers, Yarns, and Fabrics 139

DEPARTMENTS

Management Bulletin 57
News from the Mills 137
Equipment and Supply News 143
New Literature 166
Calendar 170
Advertisers' Literature 171
News About Suppliers 173
News About Men 176
Advertisers' Index 184
Reader-Service Card 185

Coming Next Month:

Modernization—A Detailed Look at Mill Cost Cutting

You'll be getting a close-up view in May's TEXTILE WORLD of the widespread modernization of mills and their facilities that's going on today throughout the industry. To give you an idea of what's in store for you, here's just a brief glance at some of the articles you'll be seeing: The story of a mill that gave its old buildings a facelifting—inside and out. The mill that makes constant change a policy that assures success. And the story of a company that actively enlists the support and cooperation of its employees to assure a favorable climate for modernization and innovation.

Cover photo by Joe Ruskin, courtesy of Waldrich Co., Clifton, N. J.

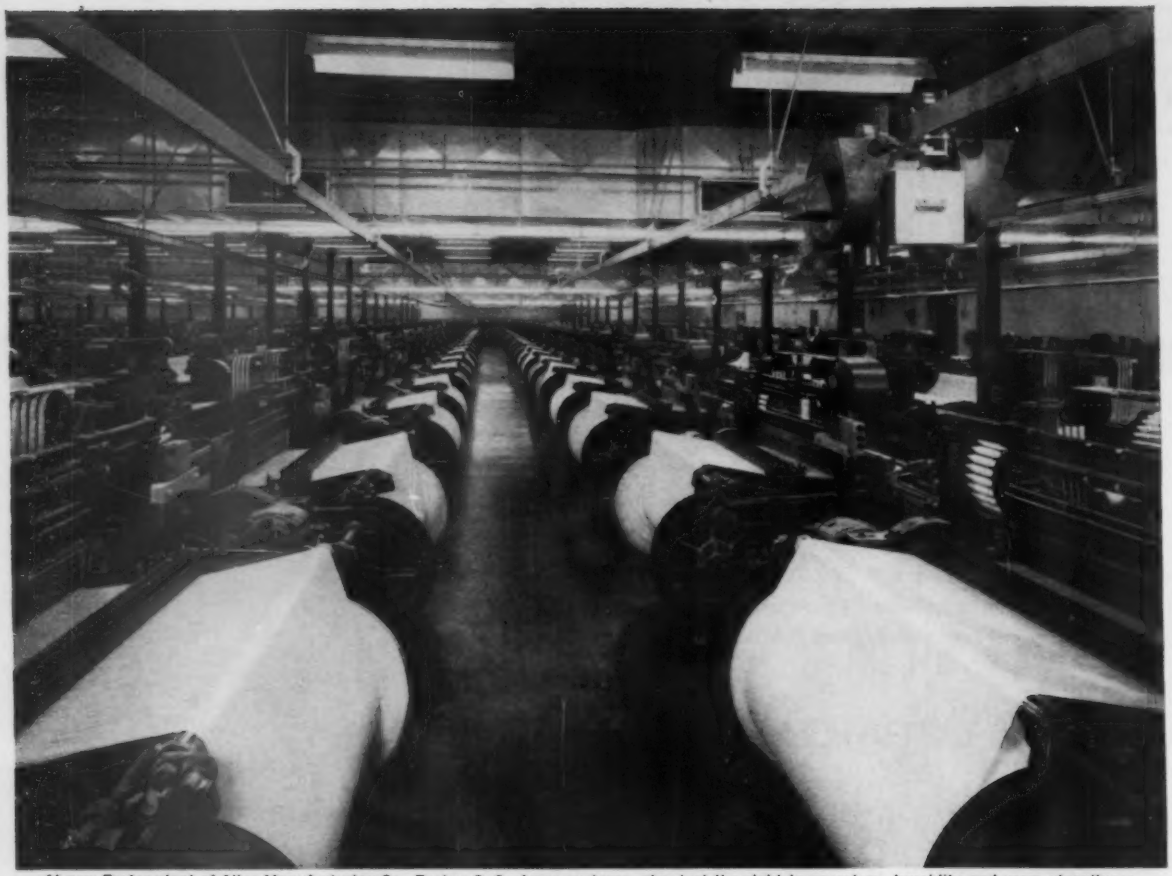
TEXTILE WORLD, Henry G. Lord founder. Published monthly with an additional issue in July, by McGraw-Hill Publishing Co., Inc. Printed in Albany 1, N. Y. See panel below for directions regarding subscriptions or changes of address. Executive, subscription, and advertising offices: 330 West 42nd Street, New York 36, N. Y. Editorial offices: 330 West 42nd Street, New York 36, N. Y. and 201 East Coffee Street, Greenville, S. C.

Officers of the Publications Division: Nelson L. Bond, President; Shelton Fisher, Wallace F. Traendly, Senior Vice Presidents; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. Officers of the Corporation: Donald C. McGraw, President; Joseph A. Gerardi, Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary.

SUBSCRIPTIONS are available only to paid subscription. Publisher reserves the right to refuse non-qualified subscriptions. Subscriptions solicited only from executives, engineers, chemists, and technicians in the textile industry. Position and company connection must be indicated on subscription order forwarded to address shown below. Single copies, $1.00. Subscription rates: United States and Possessions and Canada, $7.00 a year; all other countries, $20.00 a year. Second-class postage paid at Albany, N. Y. Printed in U.S.A. Title® registered in U. S. Patent Office.

Address correspondence and change of address to Fulfillment Manager, TEXTILE WORLD, 330 West 42nd Street, New York 36, N. Y. When address is changed, subscribers should give old as well as new address, including postal zone number. Enclose recent address label if possible. Allow one month for change to become effective.

Our primary aim is to provide subscribers with a useful and valuable publication. Comments and suggestions for improvement are encouraged. The publishers, upon written request, agree to refund the part of the subscription price applying to the remaining unfilled portion of the subscription if editorial service is unsatisfactory.



At new Foster plant of Alice Manufacturing Co., Easley, S. C., Amco systems give just the right temperature, humidity and room cleanliness.

Amco systems control temperature, humidity, room cleanliness at ALICE Manufacturing Company

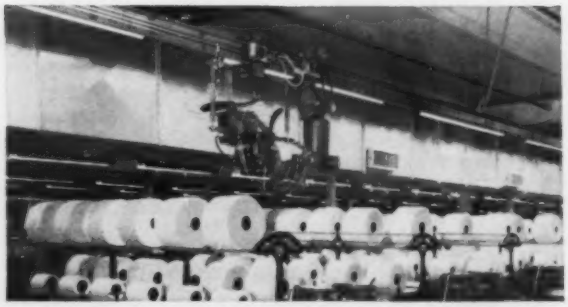
Alice Manufacturing Company is noted for its fine print cloth. One big reason for its success: rigid quality control.

Exact temperature, humidity and room cleanliness control is a must in this manufacturer's quality control set-up. That's why Amco Central Station Air Conditioning, Amco Ceiling Cleaners and Amco Heliclone® Loom Cleaners are on the job!

AMCO AIDS OUTPUT, CUTS WASTE

Here's how Amco-controlled temperature, humidity and room cleanliness help improve quality and boost production. They keep materials in top condition during each processing step to assure stronger, smoother, more uniform fabric. They permit closer machine adjustments, higher machine speeds. They reduce broken fibers, dust, fly . . . greatly decrease the need for cleaning . . . eliminate troublesome static electricity.

You can always rely on Amco to give you dependable advice and expert installation best suited to your needs. Why not learn how Amco can help *your* mill? Contact your nearest Amco representative today.



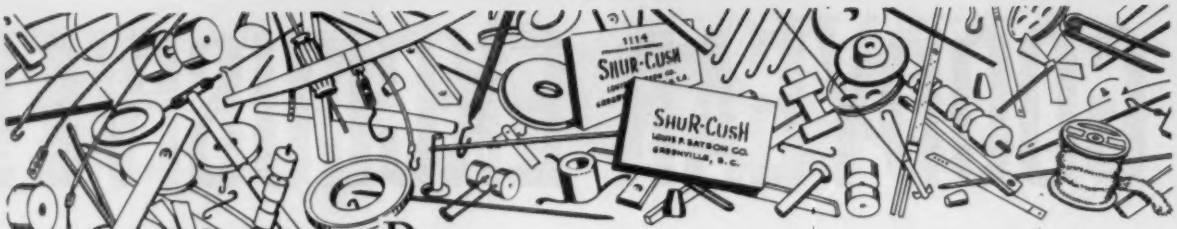
Combing department at Alice Manufacturing Co. relies on Amco Central Station Air Conditioning and Amco Ceiling Cleaner. Consulting engineers: Campbell and Leppard.

AMCO

Since 1888

Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina
Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

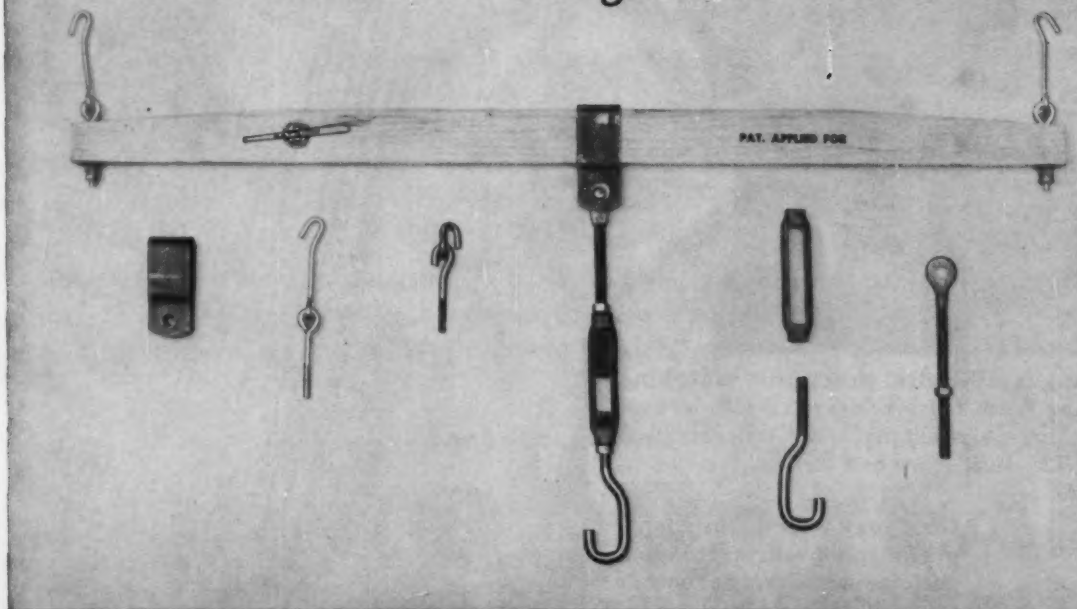


BATSON'S SLIDING CUFF JACK STICK, JACK STICK PARTS AND special Neva-Wear jack hooks are among the 1,000 Batson products that keep looms running smoothly and smartly in mills all over the country. You can use Batson's jack sticks on cam shaft for the first through the fourth harness — and on all six harnesses on auxiliary shaft! Batson is famous for consistent quality and speedy delivery. Make Batson your prime source for jack sticks and 999 other use-tested loom supplies.

Louis P. Batson Company

Box 3978 • Park Place • Greenville, S.C.

The BATSON Sliding Cuff Jack Stick

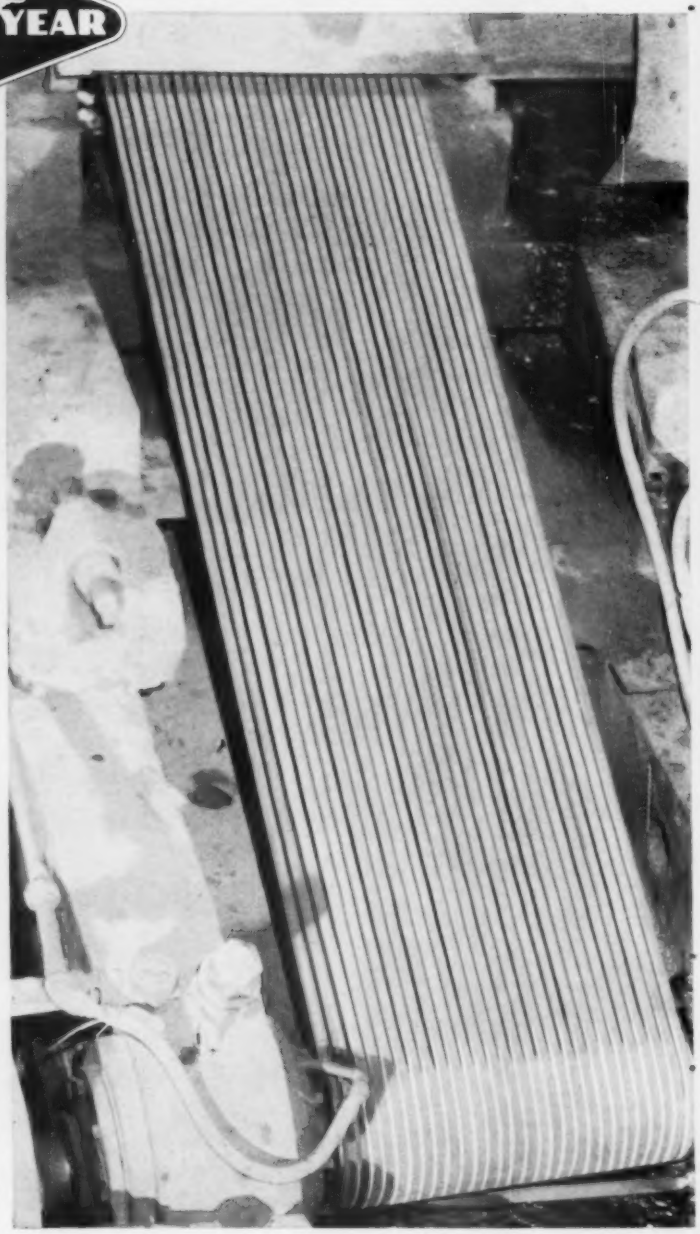


ONE OF A THOUSAND **Batson** USE-TESTED PARTS

GOODYEAR EXCLUSIVE!

IS YOUR SIGN OF V-

Goodyear V-Belts' precision matching comes from this exclusive close-tolerance matching equipment that length-codes each belt to 1/32". Most other belt manufacturers code only to 1/10".



Goodyear V-Belts' precision matching assures standout performance. Example: only 28 COMPASS-V-Steel Belts handle this big steel saw, normally calling for 42 belts. Result: the steel mill saved $500 at the original installation – will save more at every belt change.

THE GREEN SEAL BELTS CODED TO 1/32"

Here's your assurance that every belt in a set matches in length – pulls together for maximum trouble-free horsepower hours

What's more, the Green Seal means –

Dimensional stability that lasts the life of the belt–thanks to shrink- and stretch-resistant "muscles" of 3-T Process Cord or airplane-type steel cable built into each belt.

Satisfactory performance even when subjected to dampness – because of special mildew-inhibited compounds.

The most complete line of V-Belts anywhere today – always within easy reach through a nationwide network of distributor stocks.

The proper selection of V-Belts to meet your requirements with the help of the G.T.M.– Goodyear Technical Man – America's top belting specialist.

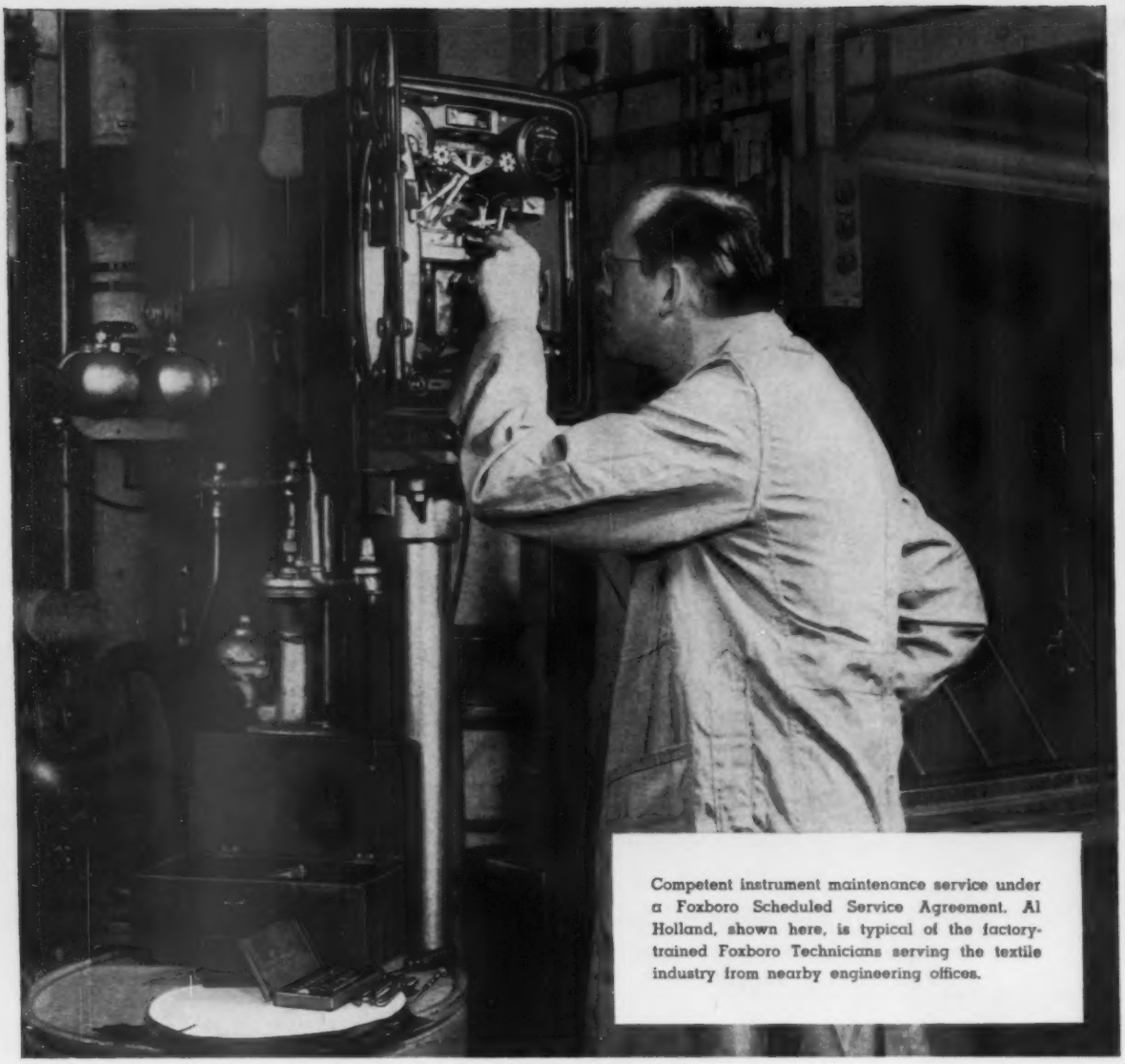
So make the GREEN SEAL your sign of savings–in both time and money–by calling your Goodyear Distributor. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.

Lots of good things come from

GOODYEAR

INDUSTRIAL PRODUCTS

Green Seal, Compass–T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio



Competent instrument maintenance service under a Foxboro Scheduled Service Agreement. Al Holland, shown here, is typical of the factory-trained Foxboro Technicians serving the textile industry from nearby engineering offices.

Scheduled Service that saves you costly shutdowns!

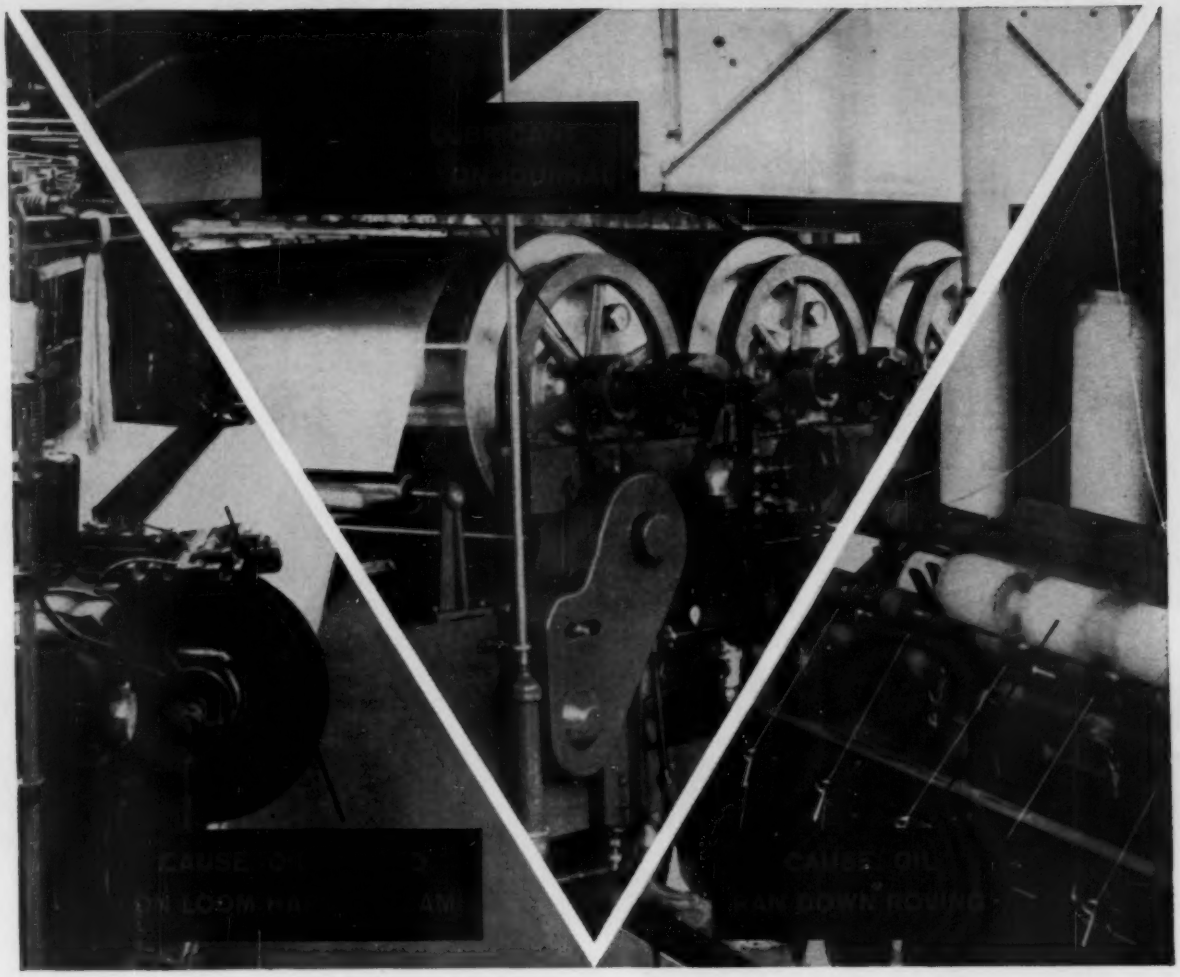
There's no better way to avoid costly interruptions to production than by keeping your Foxboro instruments and control systems operating at peak efficiency. And the simplest, most economical way to do it is with a Foxboro Scheduled Service Agreement.

Under this plan, a Foxboro Service Technician will call at your mill at regular, specified intervals to maintain, clean, and service your Foxboro Instruments. You'll not only be served by competent, factory-trained personnel, using genuine Foxboro parts and methods; you'll also save substantially over non-contract service. Supervision of instrument installation is also available where needed.

Don't wait until you're in trouble when it's so easy to prevent it. Let us recommend a *preventive* maintenance schedule for your plant now. Ask your Foxboro Field Engineer, or write for information today. **The Foxboro Company, 844 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO
REG. U. S. PAT OFF.

SCHEDULED MAINTENANCE SERVICE



Texaco's "Stop Loss" Program can help you

STOP "SECONDS" WHERE THEY START!

You should be able to add up to 4% to your net profit simply by adopting Texaco's "Stop Loss" program. It is especially designed to stop contamination where it starts. Thus it can reduce oil spoilage and cut maintenance costs.

"Stop Loss" is a complete program, designed to help you realize all the savings available through organized lubrication. It provides (1) a detailed study of your mill's lubrication requirements—every department, machine, oil cup and grease fitting, (2) recommendations for a lubrication program fitted to your mill's needs, and (3) the basic "tools" needed to set up this program and make it work effectively and inexpensively for you.

But see for yourself how "Stop Loss" works! See our new film, "Stop Loss with Organized Lubrication," which dramatically presents new opportunities for savings. Make sure you see it soon—mail this coupon today!

Tune In: Texaco Huntley-Brinkley Report, Mon. Through Fri.-NBC-TV

MAKE YOUR RESERVATION TODAY

TEXACO INC., Dept. TW-41
135 East 42nd Street
New York 17, New York

I would like to see your new movie "Stop Loss with Organized Lubrication." Please call to arrange a showing.

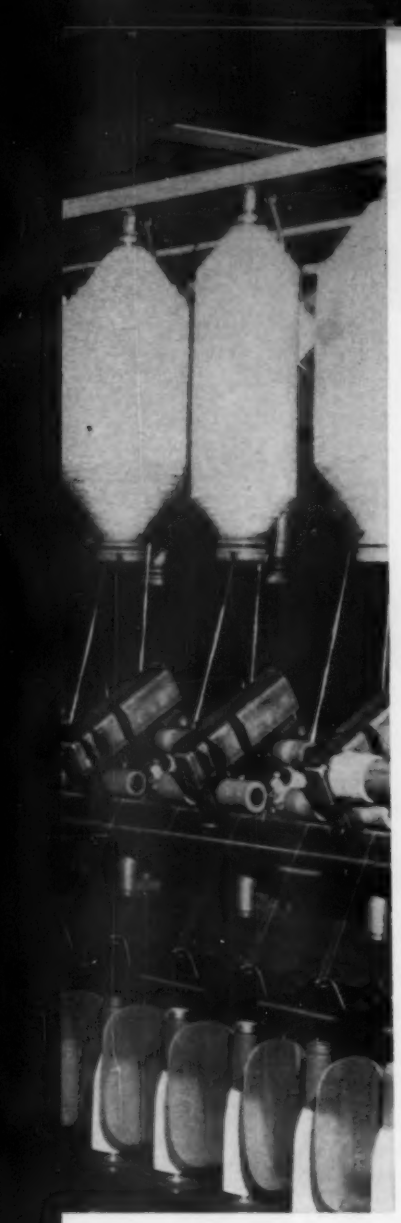
Name_____
Title_____
Firm_____
Address_____
City_____ Zone_____ State_____

TEXACO

Gilbert Mays, Overseer of Spinning at Erwin Mills Plant #1, and Jerry Ellis, Overseer of Spinning at Plant #4, check yarn production with Armstrong man J. S. Gebbie. Accotex products on this double-apron spinning frame: NO-728 and NC 762 Cots; NO-7075 Aprons; NK-770 Covers on revolving clearers.

T. C. Pegram, Supt. Plant #1, R. B. Cooke, Supt. Plant #4, Armstrong man J. S. Gebbie, and A. M. Moore, Supt. Plant #6, discuss characteristics of new Accotex spinning cot.

Luther Rasberry, Overseer of Carding at Plant #1, replaces comber detaching roll covered with Accotex NO-728. Accotex J-490 coverings are used on comber draw box rolls.



From comber to spinning frame, Accotex Cots and Aprons will help you turn out quality yarn

Although your card room and spinning room frames do different jobs, the quality of their work largely depends on the performance of their drafting roll covers and aprons . . . and this in turn requires the careful selection of the right material for each job.

This selection problem is simplified by the wide range of materials in the Accotex line. In it you'll find special compounds that are engineered to meet the requirements of each frame in the yarn preparation and spinning process.

When you specify Accotex products, you also get the benefit of the training and experience of your Armstrong representative . . . a man who's just as interested in how Accotex materials work as he is in selling them. A good example is Armstrong man Jack Gebbie, shown here working with personnel of three of the Erwin Mills plants at Durham, North Carolina.

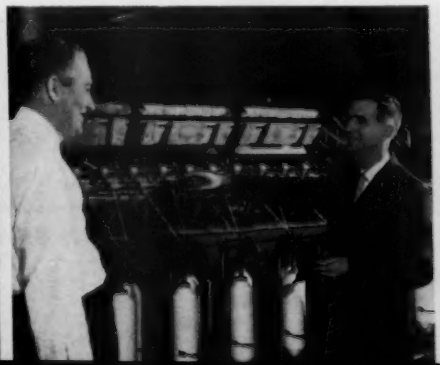
Your Armstrong man will help you get maximum production of quality yarn. Call him in on any roll covering or apron problem. Or write Armstrong Cork Company, 6504 Dauphin Street, Lancaster, Pa.

Armstrong

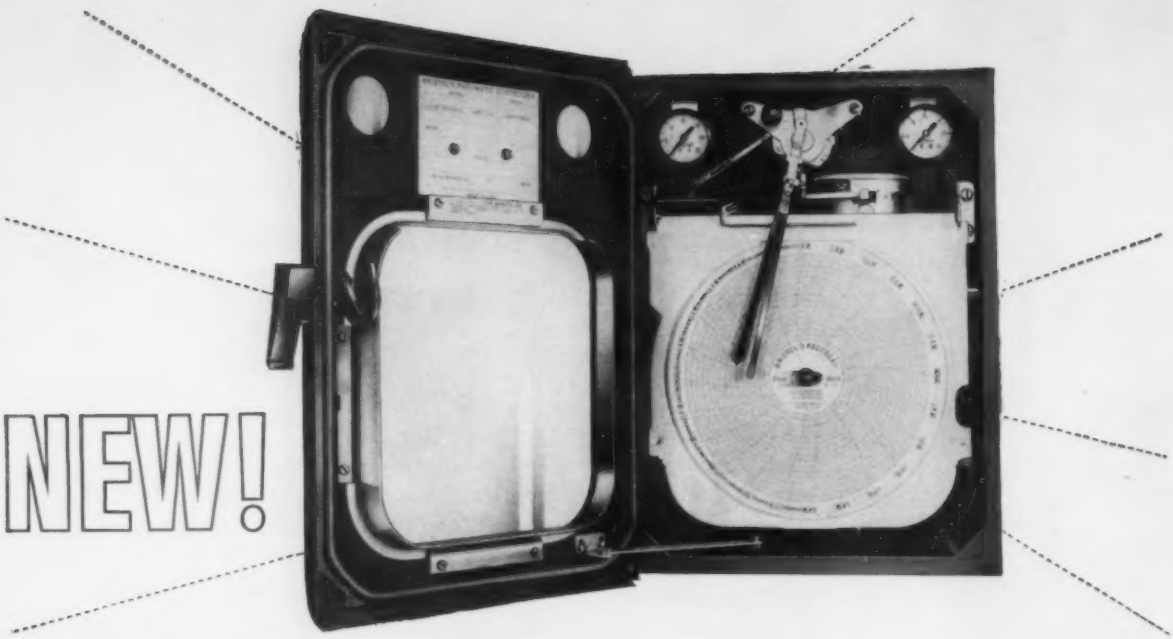
ACCOTEX COTS AND APRONS

Drawing frame operation is observed by Ottis F. Jackson, Overseer of Carding at Plant #6, and Armstrong representative J. S. Gebbie. Drawing rolls are covered with Accotex J-490.

Roving frame production is checked by J. G. Saunders, Overseer of Carding at Plant #4, and Jack Gebbie. Frame equipped with Accotex J-490 and NC-762 Cots, NO-7876 Aprons.



Roll shop foreman Otto Mayes checks buffing of Accotex NO-728 Cots with Jack Gebbie. Modern roll shop is equipped with buffing and assembly machines manufactured by Armstrong.



Bristol Series 532 A/D* pneumatic recording controller is outstandingly SIMPLE, RELIABLE, and STABLE

- **Simple modular design for ease of servicing**
- **High control stability for closer process control**
- **Designed for batch-type and continuous processes**
- **Proportional, proportional-plus-reset, and proportional-plus-derivative control models available**

Top control performance with maximum simplicity plus standard Bristol precision measuring elements—those are the key features of the Bristol Series 532 Recording Controller. The 532 uses the same renowned elements that have earned such a reputation for accuracy and dependability on other Bristol automatic controlling and recording instruments—perfected through wide experience and many years of development.

Self-contained modular design of the control unit speeds servicing. The whole modular unit, consisting of an aluminum casting with working parts made of stainless steel, Ni-Span C, and Neoprene diaphragms, can be removed by taking out only two screws and a link.

The die-cast aluminum instrument case (15¾ x 10¾ x 5¾ overall) presents a streamlined appearance and is completely dustproof and weatherproof.

Write for complete data on the new, versatile, economical 532 A/D. The Bristol Company, 103 Bristol Road, Waterbury 20, Conn., a Subsidiary of American Chain & Cable Company, Inc.

ACCO

0.46

CONTROL UNIT CHARACTERISTICS:

PROPORTIONAL BAND: 0-400% continuously adjustable, direct- or reverse-acting.

RESET: 0.1 to 100 repeats per minute.

DERIVATIVE: 0 to 10 minutes derivative time.

AIR PILOT: Non-bleed type.

PILOT CAPACITY: Over 3.0 scfm.

FREQUENCY RESPONSE: Essentially flat to 300 cycles per minute.

TEMPERATURE STABILITY: Less than 0.1% change in the output pressure for 90°F temperature change.

CHART: 8" diameter; wide variety available.

MATERIAL: Aluminum housing; 316 stainless steel internal parts; Ni-Span C feedback element.

RECORDING CONTROLLERS OFFERED FOR:

PRESSURE AND VACUUM: Ranges from full vacuum to 15,000 psi.

TEMPERATURE: Ranges from—100°F to +1000°F.

FLOW AND DIFFERENTIAL PRESSURE: With mercury-type manometer and dry-type differential unit.

LIQUID LEVEL: With bulb unit and mercury manometer and dry-type differential unit.

HUMIDITY: Zero to 100% relative humidity.

**Advanced Design*

BRISTOL ...for improved production through measurement and control

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

NOW! LOOM BOBBINS

by Stehedco

After years of Research and Development, and proven performance in leading textile mills, Stehedco Precision Bobbins are now available for high speed production of every type of yarn and fabric. Manufactured in our modern air-conditioned Greenville, South Carolina, plant, you have available the facilities, services and production of one of the largest loom bobbin plants in the country.

Manufactured under the same strict Quality Control that has made all Stehedco Products justly famous, these Super Precision Bobbins will guarantee you lower run-out and better balance than any other bobbin available.

When you want to produce Quality yarns and fabrics with greater efficiency and economy, it is imperative that your bobbins are of equally high quality. Stehedco Precision Bobbins give you the high quality you require.

Quality SPINNING, WINDING, WEAVING
Needs Stehedco Precision Bobbins.
YOU CAN DEPEND ON STEHEDCO

QUALITY Stehedco CONTROL

STEEL HEDDLE MFG. CO.

Philadelphia, Pennsylvania

SOUTHERN SHUTTLES DIVISION

Greenville, South Carolina

SALES REPRESENTATIVES

SOUTH CAROLINA: R. M. "Mike" Turner, Box 545, Clinton, S.C.;
W. B. "Brad" Dunson, Box 321, Greenville, S.C.

NORTH CAROLINA, VIRGINIA, TENNESSEE: Floyd New, Box 9202, Plaza Station, Greensboro, N.C.;
C. H. "Chal" White, Route #6, Box 644, Charlotte, N. C.

GEORGIA, ALABAMA: Hugh K. Smith, Box 472, West Point, Ga.

(B-6006)

Every feature works in your favor...dollar-wise

Here's how you benefit:

- no costly apparatus houses
- low operating and installation costs
- light weight permits ceiling suspension
- complete flexibility meets present and future needs
- provides all or any air conditioning combination such as humidifying, ventilating, heating, filtering, dehumidifying, evaporative or refrigerative cooling

Humiduct is an exclusive Bahnson design. A space saving, unit type system, it offers highest air conditioning efficiency at lowest cost.

Optional Easy-Flo Filters are economical air filters designed to prevent lint accumulation in the air conditioning equipment, thus reducing costly cleaning operations and providing more efficient air handling.

Clip coupon to letterhead. Mail today for FREE ILLUSTRATED BULLETINS—Bulletin 4A-Humiducts; Bulletin 27A-Easy-Flo Filters.

NAME_____

Bahnson

AIR-O-MATION

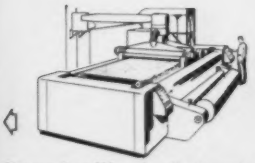
THE BAHNSON COMPANY • WINSTON-SALEM, N. C.

There's a little bit of Turbo in everything she bought!

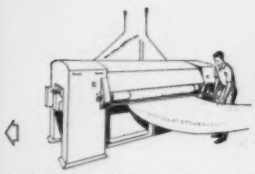
She loves beautiful things . . . sheer, delicate hosiery . . . the delightful warmth of high-bulk sweaters . . . the soft touch of fur-like fabrics . . . richly finished woolens . . . plush, carefree carpeting, draperies, upholstery . . .

Turbo machines bring out the beauty in your fabrics — in fiber production, spinning, knitting, weaving, dyeing, and finishing. Almost all the leaders in the textile industry talk to Turbo first. Shouldn't you?

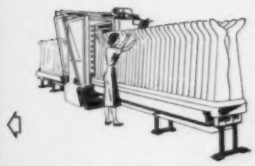
TURBO MACHINE COMPANY, LANSDALE, PA., U.S.A.
Telephone: ULysses 5-5131



Excess handling is eliminated and shearing costs are reduced for carpet manufacturers through the Turbo Cross Shearer.

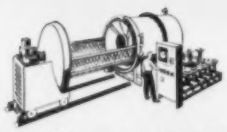


Turbo Electro-Finisher gives woolens, wool-blends, high pile and fur-like fabrics rich vibrant lustre and soft appealing hand.



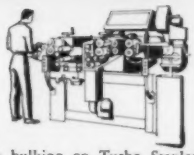
For hosiery, the Turbo Dye Boarder combines preboarding, dyeing, post boarding, and drying in one processing operation.

The Turbo Package Dyeing Machine is one of a complete line of engineered machines for dyeing, drying, extracting, and finishing.



Yarns and fibers are heat set in Turbo machines with capacities from 1000 lbs. (illustrated) to 60 lbs. per cycle.

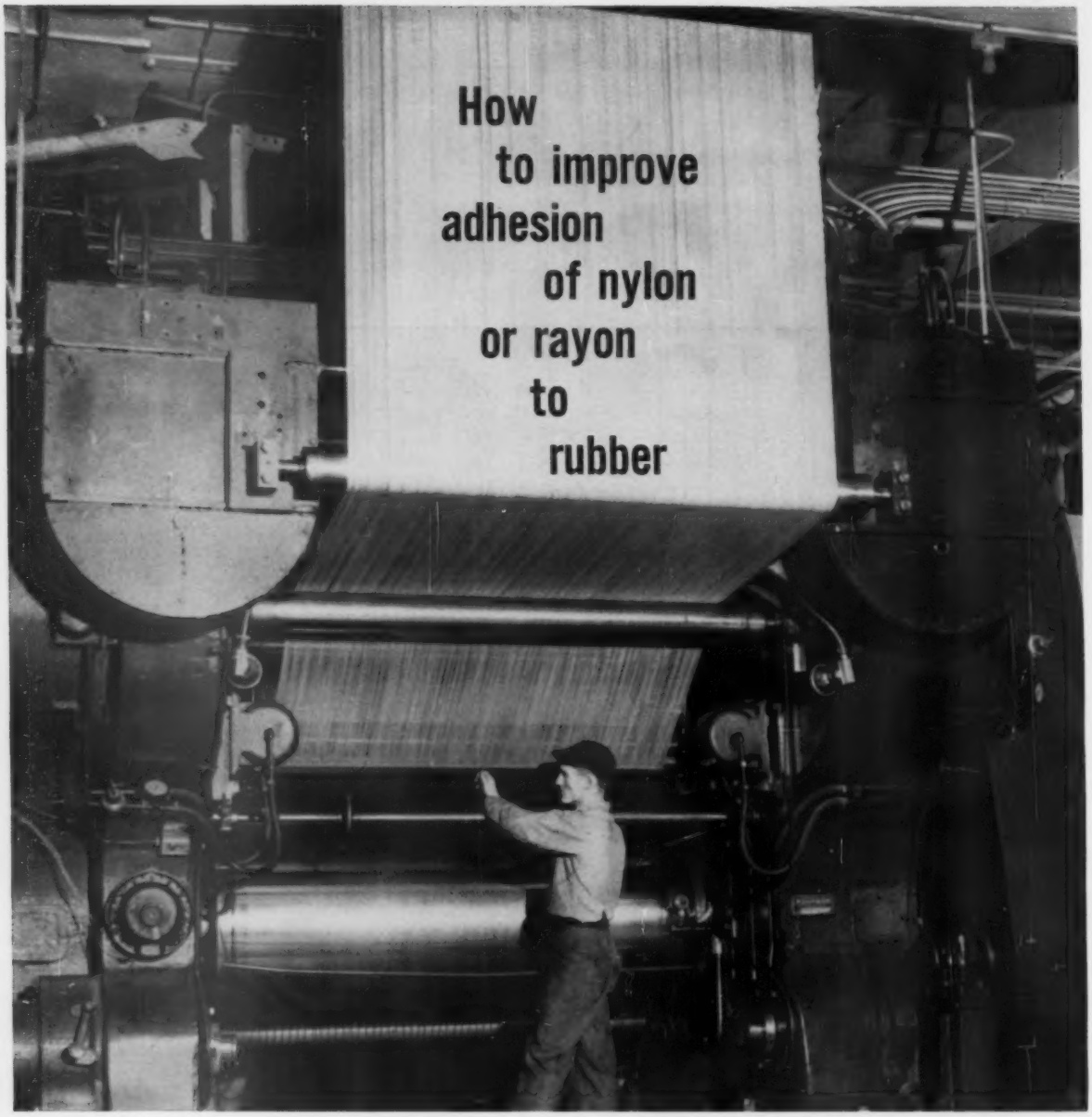
Sweaters are "set for sales" on the tray-type Turbo Fiber Setter.



High bulking on Turbo Staplers, and Turbo Fiber Setters is the shortest route to synthetic fiber spinning.

TURBO

CIRCLE 17 ON READER SERVICE CARD



USE HYCAR 2518. This new vinyl pyridine latex resulted from years of study of problems relating to achieving better performance of fiber-reinforced rubber products. Using Hycar 2518 as pretreatment of man-made yarns, cord and fabric gives positive control, exceptionally high adhesion, easily processed formulations and good "green tack."

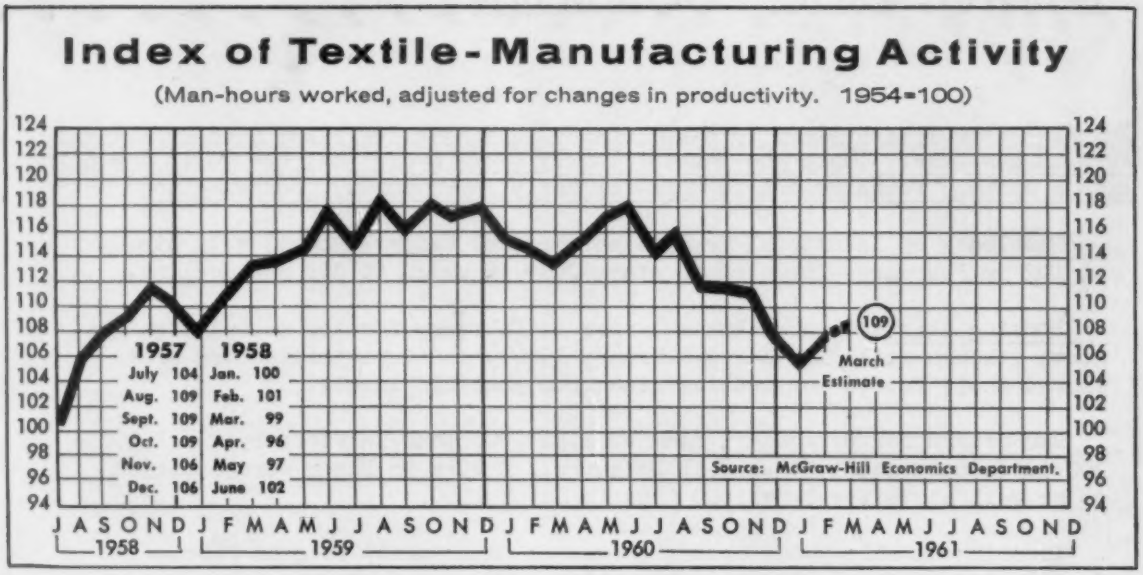
Recipes vary according to the fiber involved, the type of rubber stock, and processing limitations and application requirements. Superior adhesion results in all cases. Hand or stiffness of treated fabric or cord can be varied to meet specific needs.

To get more information about this or other ways you can produce better textiles, often at lower costs, write today for information to Department PF-4, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B.F.Goodrich Chemical
a division of The B.F.Goodrich Company

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich



Index Rises 2 Points

Don't be misled by reports of high unemployment into thinking that the general state of business is deteriorating. It's not.

●

Signs of good business aren't quite as frequent as signs of spring, but February's statistics unmistakably improved the business outlook. First of all, TEXTILE WORLD's index of textile-manufacturing activity (above) rose two points, the first advance the index has scored since last August.

In the construction sector of the economy, housing starts rose 7% more in February than the normal seasonal gain, and it was the second consecutive month they had risen. Also during February, the Veteran's Administration announced that requests for appraisals of proposed new homes rose 27%, compared with only 15% rise a year earlier. The rise in appraisal requests hints at the possibility of further increases in the rate of housing starts. A request for a VA appraisal is not a firm committment to break ground, but the volume of such request is taken as a good guide to home-building intentions.

In the industrial sector of the economy, the Federal Reserve Board announced that the six-month decline of industrial production had halted in February. While merely stanching the decline doesn't mean immediate prosperity, it is a sign, taken along with all the other statistics, that the economy is slowly shrugging off its torpor.

Figures of the Month

TEXTILE-INDUSTRY INDICATORS

	Latest Month	Previous Month	Year Ago
Textile World's Exclusive Index (chart above)	108	106	116
Employment (thousands)[1]	900.6	899.9	952.0
Production Workers (thousands)[1]	808.9	808.0	859.5
Weekly Earnings[1]	62.59	61.56	64.16
Hourly Earnings[1]	1.63	1.62	1.60
Weekly Hours Worked[1]	38.4	38.0	40.1
Production Index (1957=100)[2]	99	98	111.
Wholesale Price Index (1947-49=100)[3]	94.8	95.0	96.5
Manufacturers' Sales (million $)[2]	1100*	1140	1260
Manufacturers' Inventories (million $)[2]	2720*	2670	2580
Inventories-to-Sales Ratio	2.47*	2.34	2.05
Exports (million$)[3]	189.8*	195.1	193.8
Imports (million $)[3]	104.6*	85.7	108.5
Stock Price Index (1941-43=1¢)[4]	27.89	26.59	29.87
Failures (number)[5]	..	3	7

NATIONAL ECONOMIC INDICATORS

Industrial Production (1957=100)[2]	102	102	110
Consumer Price Index (1947-49=100)[1]	127.4	127.4	125.6
Wholesale Price Index (1947-49=100)[1]	120.0	119.8	119.3
Civilian Population (millions)[6]	180.0	179.7	177.1
Unemployment (millions)[6]	5.7	5.4	3.9
Employment (millions)[6]	64.7	64.5	64.5
Personal Income (billion $)[3]†	405.9	406.6	395.7

* January; otherwise latest month is February.

1. Bureau of Labor Statistics; 2. Federal Reserve Board; 3. Department of Commerce; 4. Standard & Poors; 5. Dun & Bradstreet; 6. Bureau of the Census; † Annual rate.

NEWS and COMMENT. . . . . .

Textile-company executives in March scanned the news for signs of a coming upturn in business. Those who looked closely (well aware that one robin doesn't make a spring) found reason to hope for early improvement. For example:

. The Index of Industrial Production (Federal Reserve Board) held steady at 102 in February--first month since July in which it did not decline.

. Housing starts (Census Bureau) rose in February for the second straight month (though still 16% below February 1960), and department-store sales showed their fourth consecutive rise from year-ago levels.

. New orders for paperboard came to 1,323,900 tons in February vs. 1,302,-300 in January and 1,241,100 in December. Orders in March were expected to be well above the 1,348,500 tons in March 1960.

. Incoming durable-goods orders (Commerce Department) rose in February for the first time in five months, gaining 2% over January. Sales were 1% above January (though still 15% below January 1960).

. Number of workers drawing state unemployment benefits (Labor Department) declined in the week ended March 4 for the second straight week. Initial applications also showed their second consecutive decline in the week ended March 11.

Meanwhile, year-end reports of textile-manufacturing companies reflected a pretty healthy condition for 1960 as a whole. Of the 14 companies that announced sales and earnings in March (below), 9 showed sales down and 5 showed sales up. Of the 9 that reported sales down, 4 reported profits up. Of the 5 reporting sales up, 3 reported profits up as well. Grand total for the 14 companies indicated 1960 sales down a little over 3% from 1959; profits down about 5.6% from 1959. As percent of sales, profits were about 3.8%--about the same as in 1959. Here's what the 14 companies reported in March.

	Sales		Profit	
	1960	1959	1960	1959
Durham Hosiery Mills	$ 2,540,665	$ 2,866,963	$ 39,997	$ 68,377*
P.H. Hanes Knitting Co.	40,823,207	43,050,878	2,330,103	2,504,000
Munsingwear, Inc.	44,747,758	43,794,168	1,646,643	1,608,092
Wayne Knitting Mills	13,067,789	13,083,163	711,549	796,903
Bigelow-Sanford, Inc.	74,214,000	71,594,000	1,444,000	1,907,000
Graniteville Co.	61,753,332	64,079,388	2,631,023	2,070,111
Dixie Mercerizing Co.	32,530,357	33,332,357	1,067,554	1,544,979
Woodside Mills	50,225,000	47,426,000	2,620,000	1,855,000
Roxbury Carpet Co.	15,257,110	19,767,319	97,194	1,234,946
Wyandotte Worsted Co.	23,671,936	21,939,694	538,544	641,830
United Elastic Co.	29,784,074	33,389,759	2,034,109	2,604,020
Mount Vernon Mills	36,997,302	44,838,692	1,211,895	1,115,792
Cluett-Peabody, Inc.	112,317,698	111,790,322	4,906,984	3,748,284
Adams-Millis Corp.	17,397,159	18,981,050	850,408	818,881

* Loss

Suppliers to the textile industry also fared well in 1960. Exceptions: fiber manufacturers. Sample reports:

	Sales		Profits	
	1960	1959	1960	1959
Whitin Machine Works	$ 71,565,332	$ 49,674,102	$ 4,049,867	$ 592,301
Sonoco Products Co.	38,000,216	36,033,409	2,459,560	2,438,980
Leesona Corp.	31,179,816	24,926,615	2,557,111	2,323,867
Scott & Williams, Inc.	11,347,650	8,029,677	4,011,701	2,574,770
Warner & Swasey Co. (Textile Div. only)	5,757,735	3,838,603	n.a.	n.a.
Draper Corp.	61,734,064	51,240,939	3,139,723	2,062,965
Industrial Rayon Corp.	47,391,429	62,067,579	3,341,389*	838,929
American Enka Corp.	95,441,000	109,176,000	678,000	5,723,000
Celanese Corp.	264,117,134	265,235,584	19,935,744	22,648,307

*Loss

On the imports front, moves came thick and fast in March.

The Senate Commerce subcommittee on textiles, headed by Senator Pastore, rendered a report that demanded immediate quotas, by country and by product category, on mill products, yarn, garments, and man-made fibers, staple, and filament. The report also asked for revision of depreciation rates, increased research by industry and government, and an early easing of the two-price system for raw cotton (price supports and export subsidies).

Commerce Secretary Hodges said that cotton price supports on the one hand and textile imports on the other hand are "destroying a basic industry." He said the Administration must help the industry. He also named a 5-man subcommittee to President Kennedy's Textile Advisory Committee. At mid-March he indicated he would try to head off the threatened boycott of Japanese woolens by the Amalgamated Clothing Workers Union, scheduled for May 1. Earlier, President Kennedy warned that such boycotts could seriously damage over-all U. S. trade with other nations.

NEWS BRIEFS--Tokyo: The government has instructed its ambassador to the United States to begin negotiations soon for an expansion of Japan's textile export quota for 1961. Observers expect him to ask for a 30% boost. Moscow: The Soviet Union reports 16,400 looms manufactured in 1960 (3% over 1959). But only 400,000 new spindles and 9,000 new looms were installed. Milan: The Chatillon Co. in 1960 greatly expanded its man-made-fiber production capacity. Its production of acetate yarns increased 23%, staple fiber 34%, polyamidic fibers 78%. Under a new 1961 trade agreement with the U.S.S.R., Italy will export (among other things) 4,000 metric tons of rayon and man-made-fiber yarns, 272,500 yards of woolen fabrics, 1,093,600,000 yards of man-made-fiber fabrics, and 164,400 yards of tapestry. Detroit: Two-ply rayon cord tires have won a thumping victory in the battle for the automotive original equipment market. Today 48% of Falcon and Comet production is being equipped with this new design. Chevrolet has decided to go 100% on 2-ply for Corvairs at convenience of the rubber companies.

WASHINGTON OUTLOOK . . . . .

Wheels have been turning on the textile problem since President Kennedy took office more than two months ago.

Take a look at the various turns Washington has taken:

First, President Kennedy appointed a special cabinet-level committee to study actions the government can take to help the textile industry. He named Secretary of Commerce Luther Hodges to head the committee.

Hodges, in turn, set up a subcommittee under Assistant Secretary of Commerce Hickman Price. Main job of the Price Subcommittee is to assemble all pertinent data on the textile problems and outline possible solutions, but make no recommendations.

Meanwhile, a Senate subcommittee under Senator John O. Pastore (D-R.I.) has updated an earlier textiles study and again recommends that controls be placed on textile imports.

*

But now the preliminaries are over. The Administration has to make some decisions. One will be whether or not to accept the Senate group's recommendations for a quota system on textile imports.

The Hodges Committee received both the Pastore report and the Price Subcommittee's analysis last month. Price's group listed possible actions ranging from no action to import controls, as proposed by Pastore.

Next step for Hodges and his fellow cabinet members is to make their recommendations to the President. Kennedy will have the final say on what, if any, government help can be given to the industry.

There's still no firm indication of how soon that decision will come.

*

Commerce Secretary Hodges is working to avoid threatened union boycotts of foreign goods. He has acted on a situation involving electronic parts, and may do the same on Japanese clothing.

Hodges invited M. F. Darling, president of Chicago Local 1031 of the International Brotherhood of Electrical Workers, to Washington to talk over imports of radio and television parts, mostly from Japan. Darling earlier had threatened to boycott the goods starting May 1. He was impressed by Hodges interest and postponed the boycott for 90 days.

A similar situation exists in the textile industry. The Amalgamated Clothing Workers of America threatens to stop working on Japanese textiles if imports continue at present volume and price levels. The U.S.-Japan Trade Council has sharply criticized the threat and said that domestic companies will be in violation of anti-trust laws if they encourage such a boycott. Hodges acted first on the electronic threat, but he indicates he may want to talk next to Amalgamated Clothing Workers leaders.

*

The Export-Import Bank is moving to make more credit and insurance available to exporters. Activity in medium-term loans is expected to increase.

The Export-Import Bank and the Treasury Department are recommending new methods for boosting both credit and guarantees to U.S. exporters.

Many exporters think they'll be able to compete better in foreign markets with improvements in insurance and credit.

Improve quality–

lower handling costs with…

EAGLE®

easy flow starch

WRITE OR PHONE *Corn Products for expert technical assistance…*
helpful data on these fine products for the Textile Industry:
GLOBE® · EAGLE® · FOXHEAD® · TEN-O-FILM® · CLARO® · CRESCENT® starches · GLOBE® · EXCELLO® dextrines.

CORN PRODUCTS COMPANY INDUSTRIAL DIVISION • 10 East 56 Street, New York 22, N. Y.

First Showing

at the Knitting Arts Exhibition

This new Cocker Tricot Warper was designed to meet the needs of the average Tricot knitting mill. It is also a valuable piece of equipment for large yarn producers.

The Model SB contains all of the features necessary to produce the very finest Tricot warps. Be sure to see it.

Booth 47
Knitting Arts Exhibition
Atlantic City, N. J.
April 24-28

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA: Contact W. S. Clark, Montreal, Canada, Oxford 7-2242

IN MEXICO: Ing. J. Via, Jr., I. La Catolica 45-911, Mexico, D. F.

PLANT & OFFICES at Ranlo, N. C.
MAILING ADDRESS: Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

every Heller factoring plan is different!

Heller factoring is more productive because Heller makes it a point to understand the differences in men and companies, tailoring the application of each Heller plan. The difference is worth having.

Heller factoring has the effect of increasing your working capital without diluting your control or hampering your action. Too, your Heller plan cuts out management's preoccupation with non-productive credit, collection and accounts receivable routine work. This frees management for more selling, more field work, more design and research, or any other project necessary for expansion and profit. In most companies, this is the only way such activity can be generated.

Back of this increased activity is your Heller representative—in step with your plans, able to help make your tailored Heller plan do what you want.

If you haven't got the Heller competitive advantage, write for "Profit Through Factoring"—no obligation whatever.

Only Heller Can Offer You Heller Services

WALTER E. HELLER & COMPANY

105 W. Adams St., Chicago 90, Ill.
342 Madison Ave., New York 17, New York
Fulton National Bank Bldg., Atlanta 3
Walter E. Heller & Company of New England, 31 Milk St., Boston 9, Mass.
Walter E. Heller & Company of California, 849 S. Broadway, Los Angeles 14, Calif.

Over one billion dollars annually for industry

Walter E. Heller & Company
105 W. Adams St., Chicago 90, Ill., Dept. TW-4
Please send me "Profit Through Factoring".

Name, Title_____
Company_____
Address_____
City_____ Zone_____
State_____

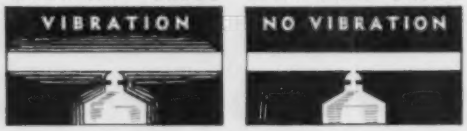
THE CREEL

LINT PNEUMAFIL FREE

PATENT NO'S 2,945,639 D 179,239

DESIGNED FOR TODAY'S (AND TOMORROW'S) LARGER ROVING PACKAGES

TODAY'S trend toward larger roving packages is causing our customers to appreciate the superior features and advantages of rigid, non-vibrating LINT-FREE CREELS. Vibration not only produces break backs, but a far worse condition known as *stretched roving*. This is essentially *"uncontrolled drafting."*



LINT-FREE CREELS guard against uncontrolled drafting by providing the maximum strength and stability possible in a creel. They are made with these components to assure complete rigidity and vibrationless operation:

- STRONG EXTRUDED ALUMINUM SPANS
- CAST IRON CROSS SUPPORTS
- COLD ROLLED STEEL POSTS
- STAINLESS STEEL ROVING RODS

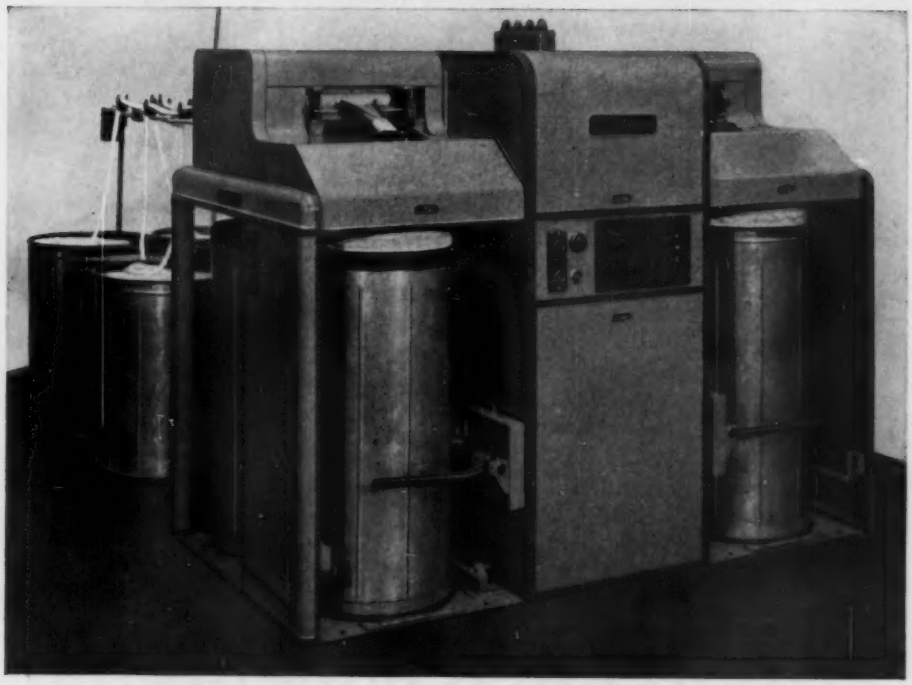
And — LINT-FREE CREELS can be quickly changed from 4/0 4/2 6/0 6/2 8/0, can be easily installed by yourself, and feature the *original* air-foil design. Remember, quality spinning starts with LINT-FREE CREELS— made *only* by PNEUMAFIL.

Protect your investment! Buy only PNEUMAFIL LINT-FREE CREELS – designed to accommodate any bobbin size today or in the future.

We welcome the opportunity to discuss your creel needs.

PNEUMAFIL CORPORATION • CHARLOTTE 8, N. C.

© Pneumafil Corp. 1960



High Speed Drawing Frame, model SB 62

Automatic can-changing

Easy handling by headstock located in the centre

Cans up to 16" of diam. and 42" of height

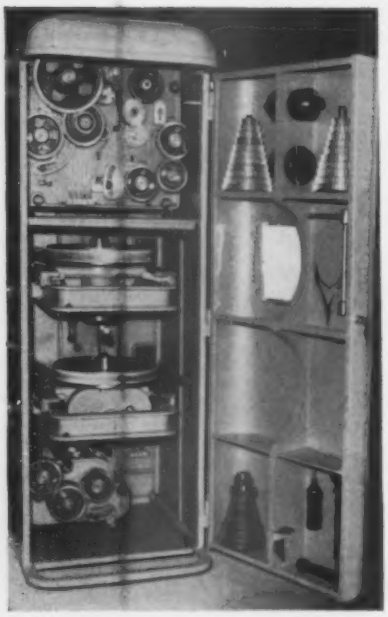
Delivery speed up to 180 m/min. (590 ft./min.)

Pneumatic cleaning device

Make profit of our experiences gathered up in the course of many years.
Our specialists will give you advice for the planning or modernization of complete Spinning Mills for cotton, worsted, staple and man made fibres.

INGOLSTADT DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT

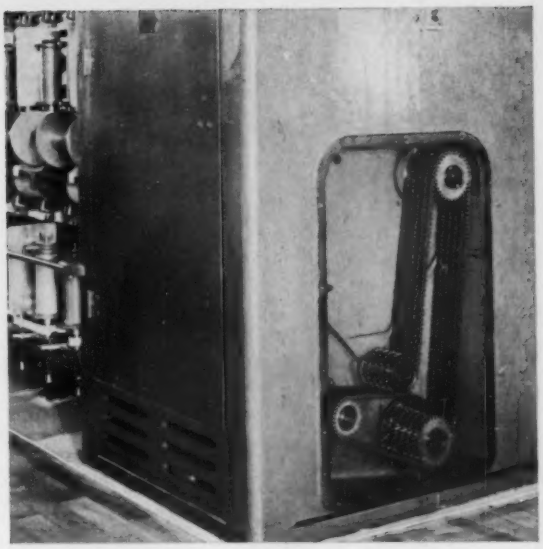
OMM RUBBER COVERING MACHINE
to be exhibited on the STAGE



This extremely efficient machine covers any count of rubber or Spandex with any count cotton, nylon, rayon, silk or acetate. Spindles run smoothly and continuously at speeds up to 16,000 r.p.m. Each spindle has an individual brake. Spindles are fitted with precision ball bearings and have a fixed inner tube to keep the core yarn from twisting. Feed, draft and take-off are varied through change gears. Two variable speed motors give a constant torque at all speeds. Unique, long-life endless driving belt, provides automatic tension throughout variations in weight and speed. Rubber thread feeding from ribbon, king cones, chained warp or flanged spools. Two type spindles are available with 3″ or 6″ packages. Machine is available with 40, 60, or 80 heads. Covered thread is delivered on tubes or hanks.

SALES • SERVICE • PARTS
ATKINSON, HASERICK & CO., Inc.
FRAMINGHAM, MASS., GREENVILLE, S. C.
& PHILADELPHIA, PA.

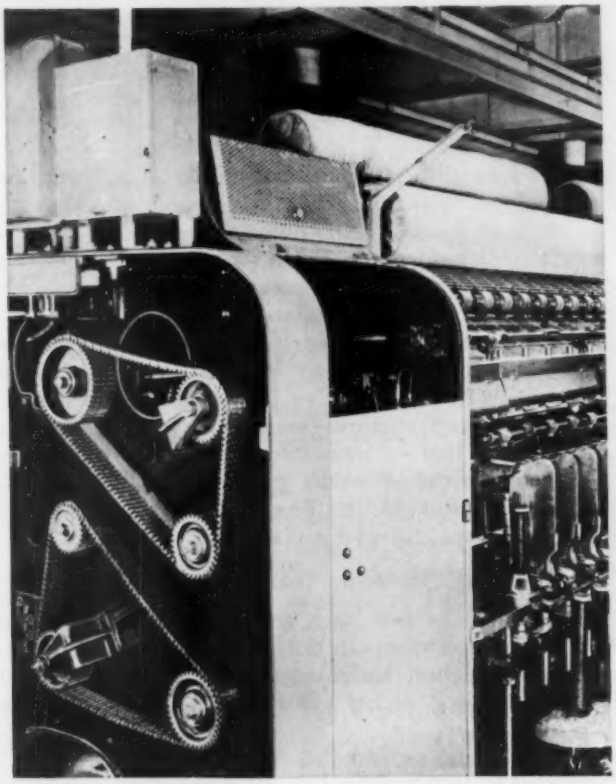
Manufactured by:
OFFICINE MECCANICHE MENEGATTO
MONZA, ITALY



FOR DRIVING A SERIES OF SHAFTS on fixed centers, Link-Belt silent chain assures positive transmission of power. On applications requiring reverse rotation of shafts, Link-Belt duplex silent chain is capable of driving wheels from either side of chain.

Link-Belt silent chain

for drives that can't afford to slip



Smooth, positive engagement assures full power transmission

Continuous, nonslip operation for many years with only routine attention—this is a common experience with Link-Belt silent chain. Where other types of drives are impractical due to slipping tendencies, this modern chain drive delivers positive transmission of full-rated horsepower.

Link-Belt silent chain assures efficiency for either large or fractional-horsepower drives. Easy assembly in tight spaces permits built-in drives, compact housings. Close grouping of equipment saves valuable floor space. High humidity, temperature have no effect on performance. Ratios as high as 10-to-1 are accommodated on relatively short centers.

Available in a full range of sizes. For complete information, call your nearby Link-Belt office or authorized stock-carrying distributor. Ask for Book 2425.

WHERE HUMIDITY RUNS HIGH, all steel Link-Belt silent chain drives operate for years with unimpaired efficiency; provide slipless starting and smooth running regardless of load conditions.

LINK-BELT

15,008

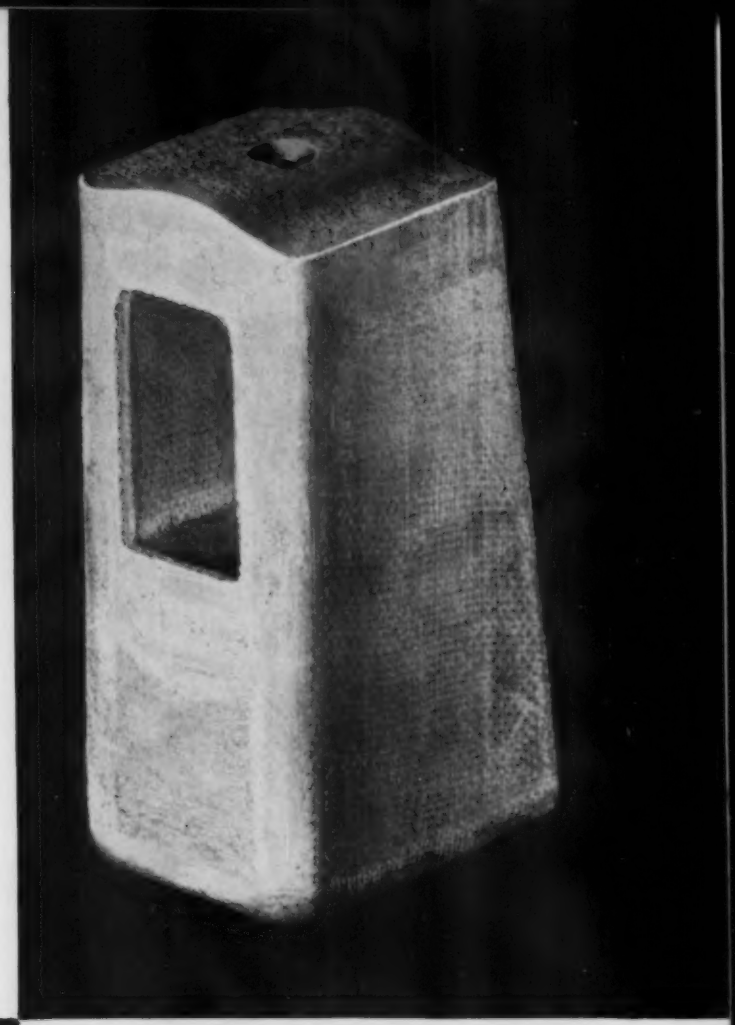
SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Warehouses, District Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs; Switzerland, Geneva. Representatives Throughout the World.

You name it,

Dayco makes it...

a Thorobred Picker to handle any assignment!



1. Dayco Thorobred Premium Loop Picker, readily identified by its gold back . . . rugged and always reliable.

Newest of Dayco's Thorobred Drop Box Pickers is the Golden Thorobred, fully molded in one piece from an ultra-high molecular polyester. Careful in-use studies show that its life expectancy is 10 times that of the conventional picker. If you've used the Golden Thorobred Drop Box Picker and liked it, you may wish to try the Golden Thorobred Loop Picker, now available in many sizes.

Meet the full family of Dayco Thorobred Loop Pickers! With their help, you'll substitute high production levels for the down-time so often resulting from picker trouble. You'll see the difference in cloth quality that superior picker performance can make. And you'll see a big difference in *quantity*, too.

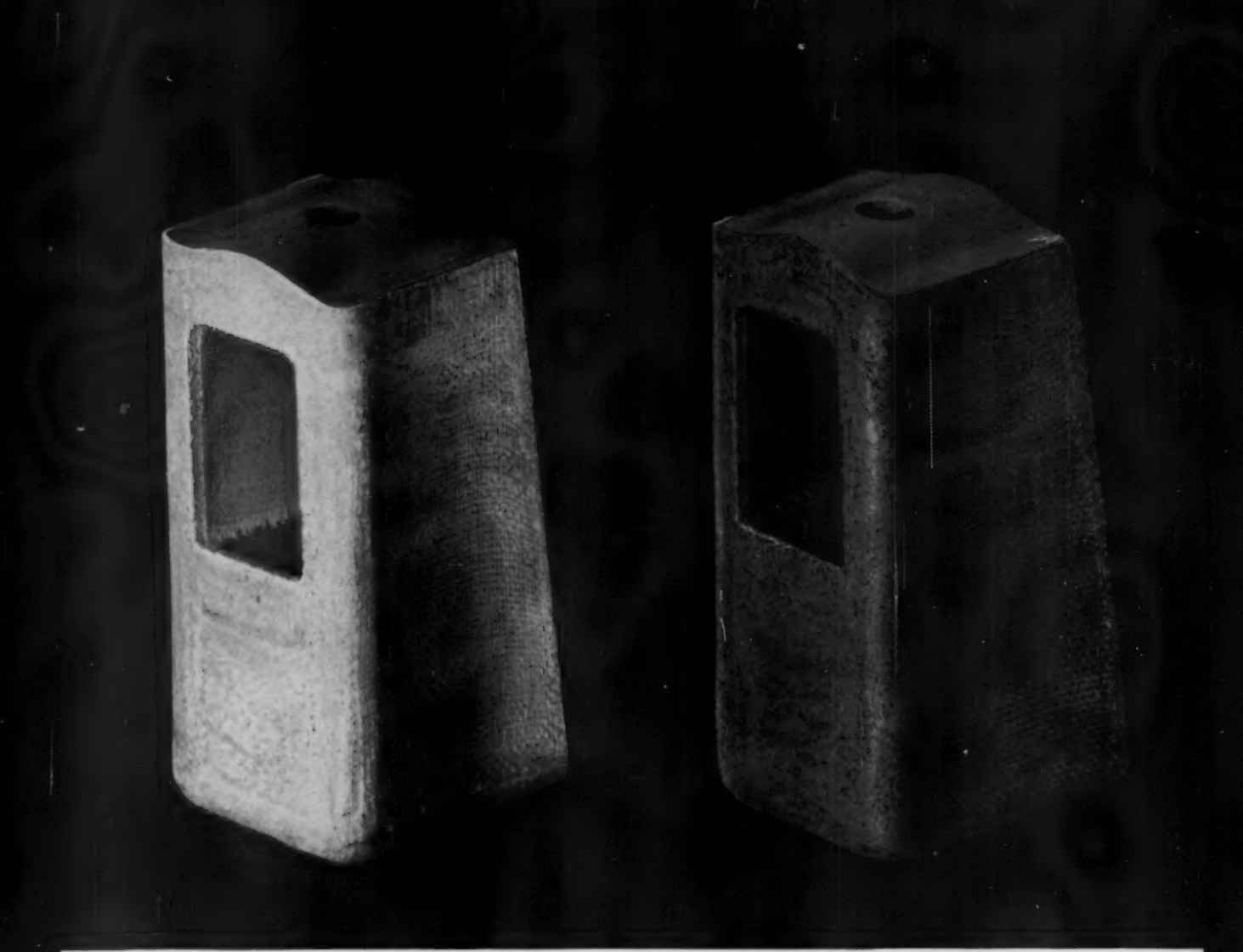
First, the Dayco Premium Picker. It's really rugged —so sturdy and resilient it amazes even experienced mill men. Once they've become accustomed to its superior performance—even in operations that require the very best—they're sold on Dayco Premium! And little wonder. Keeping perfectly in time through millions of picks, the Premium stays on the job far past normal time for replacement.

Bring On Your Toughest Assignment

Perhaps the best way to explain what the Dayco Premium Picker can do is simply to say: bring on your toughest assignment. See the way that this quality loop picker will tackle it. You'll like what you see.

A second outstanding loop picker from Dayco is the Dayco Thorobred Super. Very likely you're already familiar with the Super, for its record of fine

CIRCLE 30 ON READER SERVICE CARD



2. Dayco Thorobred Super Loop Picker, white with red back . . . designed with modern loom requirements in mind.

3. Dayco Thorobred Standard Loop Picker, black with red back . . . for excellent service on E model looms and slower.

performance comes into the conversation almost as often as textile men talk shop together.

Like the Dayco Premium, the Super is fully able to cope with the demands of modern weaving equipment. It's able to withstand the weight of heavier plastic shuttles . . . it's at home with longer quills and higher loom speeds. Use the Dayco Thorobred Super Loop Picker and see if you don't agree: its ability to withstand the continual thrust of the shuttle—without loosening or early wear—is truly impressive.

Pay For What You Need

Economy of operation dictates, of course, that you pay for no more than you need. Yet, even where less is required of a picker, it must fully measure up to what *is* required, or "economy" turns into expense and waste. Dayco again supplies the answer: the Dayco Thorobred Standard Picker, recommended for E Model and slower looms.

Like the Premium and the Super, the Dayco Standard Picker is built in one piece. There's nothing to break or distort when it's driven onto the stick. And, like all Dayco Thorobred Pickers, the Standard gives perfect shuttle contact. The picker-stick hole is slightly tilted. The flared bottom permits easy, accurate seating. And the Standard stays exactly in position, for perfect alignment with the shuttle.

Pick a Dayco Picker

How can a lower-priced picker offer so much? The answer is simple. Dayco engineers design *each* picker to measure up to the demands that will be placed on it. But the same basic principles . . . procedures . . . and precision that help make the Premium as good as it is are adhered to in producing *every* Dayco picker.

Premium, Super and Standard, they're available in many sizes, to meet every possible requirement. So to pick the picker that's best for any given operation, simply contact your Dayco jobber. Or write or phone Dayco Textile Products Co., 401 S.C. National Bank Bldg., Greenville, S. C., for further information. Overseas Plant: The Dayton Rubber Co., Ltd., Dundee, Scotland.

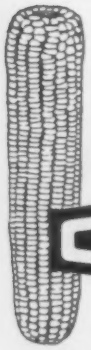
Dayco TEXTILE PRODUCTS CO. Dayco

Division of Dayco Corporation

CIRCLE 31 ON READER SERVICE CARD

Like sizing warp "end by end"

Weaving at high efficiency goes back to the depth and uniformity of warp sizing. CLINTON starches reach warp ends *completely*, to give yarn increased strength and a friction-free surface. At the slasher and loom, shedding is minimized. In the finishing operation, CLINTON starches give the proper hand and body to your fabrics. To assure consistent quality from warp sizing to finishing, you can always count on dependable CLINTON starches . . . the standard of comparison in leading textile mills.



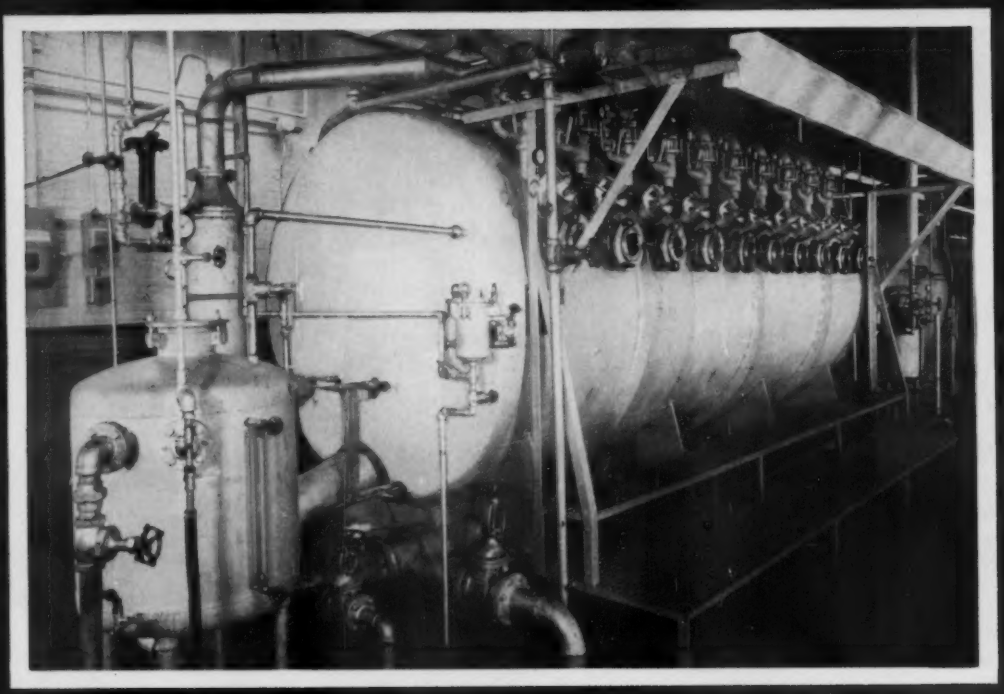
CLINTON CORN PROCESSING COMPANY

CLINTON

CLINTON, IOWA

CIRCLE 33 ON READER SERVICE CARD→

NEW AS TOMORROW'S HEADLINES



JET DYEING MACHINES

PATENTS PENDING

A PRODUCT OF BURLINGTON INDUSTRIES' RESEARCH

FOR WOVEN AND KNIT FABRICS

SEE IT AT BOOTH 647 A.A.E. ATLANTIC CITY, N. J.

40th ANNIVERSARY

Gaston County Dyeing Machine Co.

WORLD'S LARGEST PRODUCERS OF PRESSURE DYEING & DRYING MACHINERY

STANLEY, N. C., U.S.A.

REPRESENTATIVES

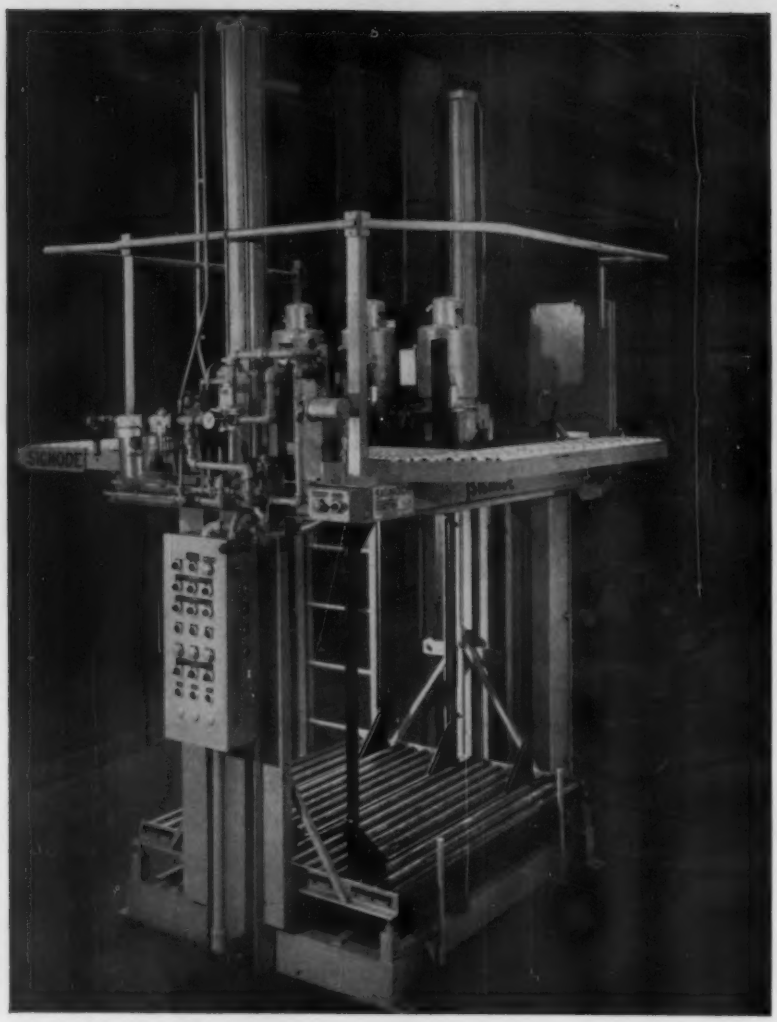
G. Lindner
Terminal Bldg., 68 Hudson Street
Hoboken, N. J.

Albert P. March
Flourtown, Pa.
Philadelphia ADams 3-2901

J. R. Angel
1104 Mortgage Guarantee Bldg.
Atlanta 3, Ga.

A. R. Breen
80 E. Jackson Blvd.
Chicago, Ill.

The Rudel Machinery Co., Ltd.
614 St. James Street, W., Montreal
260 Fleet St., E., Toronto



For automatic production line packaging of textiles...

New Signode Texomatic compression strapping machine

The Texomatic is designed specifically for the textile industry with a compression capacity of 2,000 pounds. It is powered by three M-20 power strapping units that simultaneously and automatically feed, tension and seal three straps. Each of these 3-horsepower units is powerful enough to prevent overloading at fast speeds and high strap tensions. Even the conveyor is powered. All the operator does is push one button to compress and strap, another to convey the package.

For further information on the Signode Texomatic, call the Signode representative near you or write:

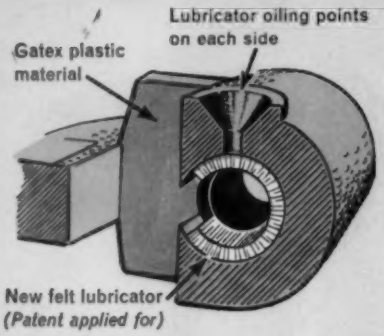
SIGNODE
STEEL STRAPPING CO.
2642 North Western Avenue • Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

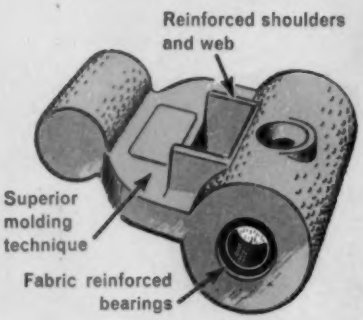
First in steel strapping

CIRCLE 35 ON READER SERVICE CARD→

Another product
in Gates complete line of
Textile Accessories



Exclusive new Gates features!



Latest advance
in plastic drop box pickers!

Less wear on picker bearings and spindle —New felt lubricator (patent applied for) stores oil and dispenses it at an even rate on the spindle rod . . . provides long-lasting lubrication . . . cuts lubricating time. New fabric-reinforced bearings reduce friction and heat and extend the service life of the Gates picker, reducing down-time and replacement costs.

Longer life for picker and stick — All stress points on the shoulders and web of the Gates picker have been reinforced and strengthened for the entire picker stick stroke. As a result there is a minimum of web and shoulder splitting and the picker lasts longer. The wider shoulder design also results in considerably longer picker stick life.

Greater picker impact strength — Gates reversible drop box pickers are made of new Gatex plastic—a dense material highly resistant to impact. They are formed through special molding techniques that eliminate internal stresses, increasing picker life.

These exclusive new Gates features, together, give you longer picker life, and reduced spindle rod and picker stick wear. For complete information, call your nearby Gates Distributor.

The Gates Rubber Company, Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Gates Distributors are in the YELLOW PAGES

Gates®
The Mark of Specialized Research

Gates Textile Accessories

Tex-Hide and Vulco Loop Pickers

Tex-Hide Harness Straps

Thin-Tex, Vulco, Tex-Hide and SuperTex-HideLugStraps

4-in-1 Check Straps
Multi-Check Straps

TPA 904

GRADE
COLOR
SHAPE

The original Mr. Gross

If it's a new idea in shipping containers, the man they call 'Mr. Corrugated' probably had a hand in it.

TO TED GROSS, originality comes as naturally as breathing.

Ted has been applying his inventive gifts to corrugated box users' needs for 26 years. Currently he's Technical Advisor of Union-Camp's Box and Board Division. *Creative Director* might be a better description. Because Ted actually coordinates all the activities that go into the developing, designing and testing of a new corrugated container.

Remember the famous "V-Boxes" in World War II? They were developed when Ted was President of Container Laboratories. A task force under his direction worked closely with a special committee of the Fibre Box Association to produce the original wet-strength corrugated box. This development enabled military supplies to withstand the wet conditions of amphibious landings.

The widespread use today of lightweight, low-cost *produce* boxes also owes much to Ted's ingenuity. As Chairman of the Citrus Container Institute, he pioneered in developing corrugated boxes for shipping citrus fruits. The knowledge gained in this area has led to the widespread use of corrugated for shipping a variety of fresh produce—safely and economically.

Look at the instruments in our photograph. They're the special box gauges now being adopted as the standard for measuring the inside dimensions of a corrugated container. You guessed it. Another Ted Gross "first."

The original Mr. Gross' latest project is field testing new types of *bulk* boxes. They'll be used primarily for shipping granular products in lots weighing thousands of pounds. Imagine the savings this will effect over conventional handling methods!

What can Ted Gross and his staff mean to you in terms of greater shipping efficiency and economy? It costs nothing to find out. Union-Camp's comprehensive packaging service is available to all shippers. It includes equipment analysis, box design and development, specifications control, merchandising counsel and in-plant surveys of your materials handling operation.

A note on your letterhead will bring a prompt response. Why not write us today?

UNION-CAMP®
CORRUGATED BOXES
Union Bag-Camp Paper Corporation 233 Broadway N.Y. 7, N.Y.

Plants: Savannah, Georgia · Trenton, New Jersey · Chicago, Illinois · Lakeland, Florida · Spartanburg, South Carolina · Jamestown, North Carolina
Subsidiaries: Allied Container Corporation, Dedham, Massachusetts
The Eastern Box Company, Baltimore, Maryland.

NOW...FASTER,
LOWER COST SLASHING
MORE UNIFORM YARN SIZING

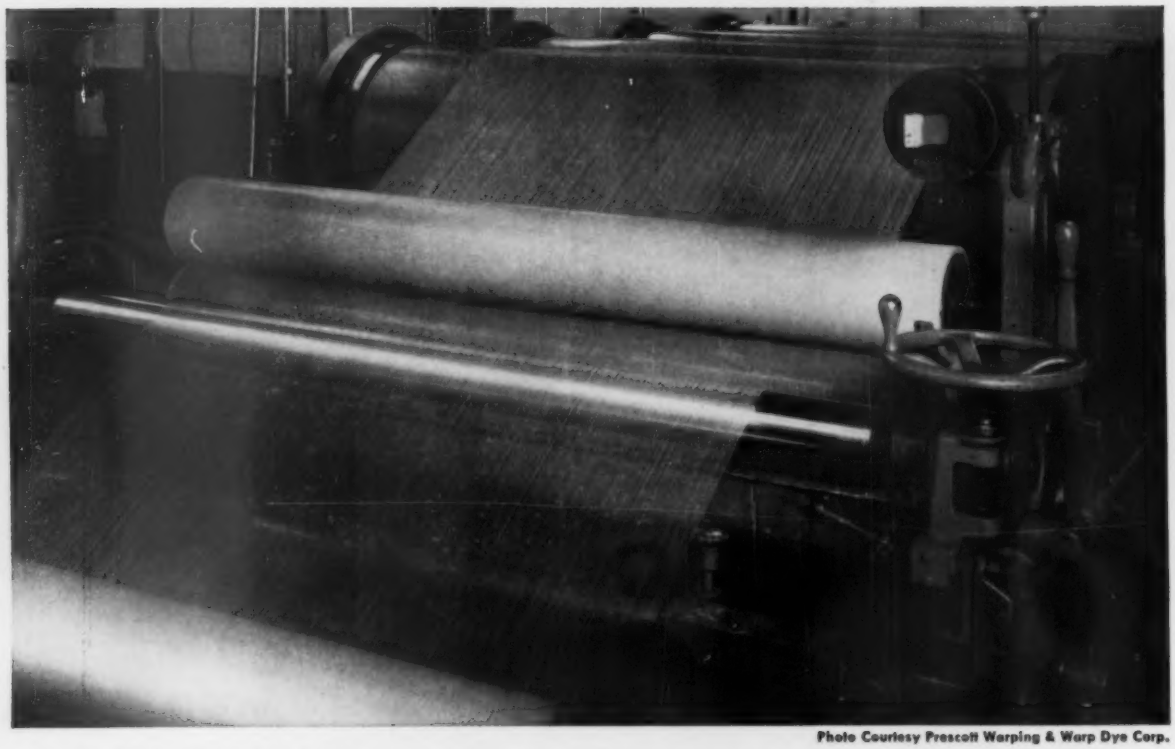


Photo Courtesy Prescott Warping & Warp Dye Corp.

NEW MANHATTAN SLASHER ROLLS ARE YOUR BEST BUY AT SQUEEZE AND DRESSING ROLL POSITIONS

ONLY MANHATTAN SLASHER ROLLS OFFER THIS COMBINATION OF FEATURES:

- Special synthetic rubber compounds control size pick-up to your requirements.
- Uniform, correct roll density assures *uniform, even* pick-up—the finish *you want.*
- Accurate metering of size permits substantial savings in starch costs.
- Distinctive red roll color permits faster, easier detection of yarn-end breaks.
- Keep perfect cushion *without* indentation—eliminate slasher downtime costs to maintain blankets.
- Roll end-caps prevent metal corrosion between cover and metal core.
- Provide highest resistance to starches, gums, softeners, oils or chemicals. Can be reground for longer life.

Let a Manhattan roll engineer show you how to get "More Use per Dollar" with Manhattan Slasher Rolls. Ask about the new Textractor and Texroc Rolls for maximum water removal and longer life on your mangles.

RM1058

ENGINEERED RUBBER PRODUCTS ...MORE USE PER DOLLAR

RM

ROLL COVERING PLANTS AT PASSAIC, N. J. • NEENAH, WISC. • N. CHARLESTON, S. C.

RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION, PASSAIC, NEW JERSEY

PUBLICO
61.1. TW

MANUFACTURING

WINDING MACHINERY

Allows to make direct from grey or dyed cakes or bobbins straight or pineapple edged packages for weaving and knitting.

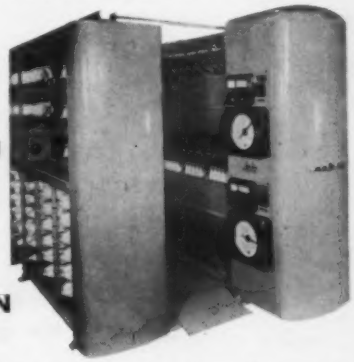
- **M TYPE** - for synthetic crimped and bulky yarns.
- **55 TYPE** for other textiles.
- **5 B AND 5 C TYPE** for coarse count yarns and cabled yarns for tyres.

TWISTING MACHINERY

- **AR. 4 TYPE** Assembler-Twister for crimped and twisted wool yarns special cabled yarns (sewing thread, fishing net yarns..)
- **ARC TYPE** spinning plant Ring Twister for extruded yarns.
- **ARU TYPE** double deck combined Ring-Twister which allows with single operation to make cabled yarns by twisting and plying simultaneously elementary yarns.

TEXTURIZED YARNS MACHINES

- **FT TYPE** and subsequent machines for synthetic yarns.
- **FTF TYPE** machine for bulky synthetic yarns according to a single process.



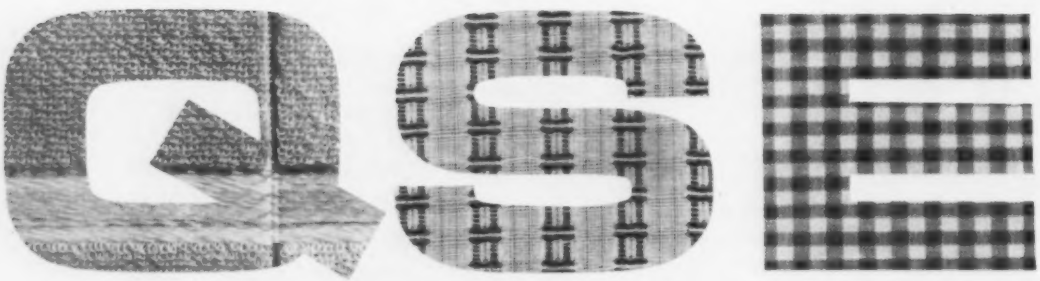
BEAMING PREPARATION MACHINERY

- **ER TYPE** Multicylinders Slasher for all textiles.
- **OR TYPE** high efficiency sectional warper with removable drums.
- **CR TYPE** magazine or truck creel.

WHITIN MACHINE WORKS
WHITINSVILLE MASS. U.S.A.

KNITTING ARTS EXHIBITION
ATLANTIC CITY 24-28 th APRIL 1961
BOOTH 1005

Crompton & Knowles
Provides the Keys to Weaving Profits
in These Basic Control Areas

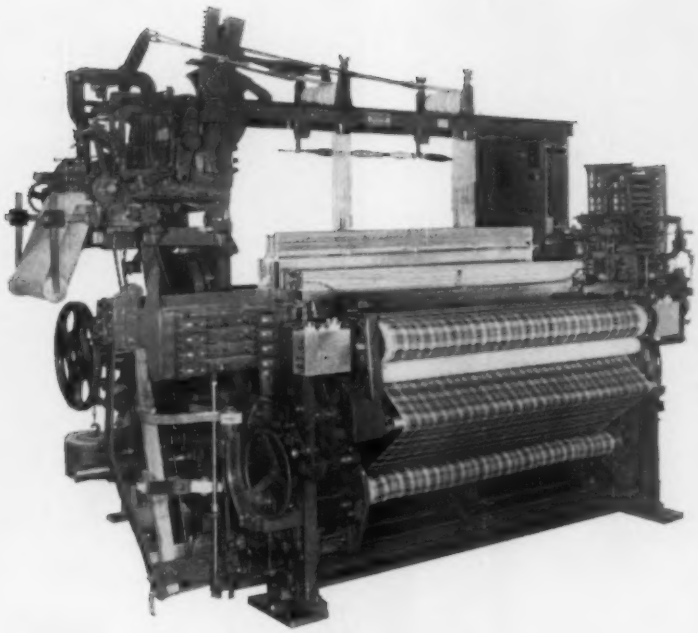


QUALITY OF CLOTH SPEED OF LOOM EFFICIENCY

Six factors affect the cost of every yard you weave, and consequently, profits. Competition makes it increasingly important first to recognize then to consider total operating costs. The mill that controls them all with the most modern equipment possible will prosper more than marginally in the sixties.

For a better understanding of some considerations that are frequently overlooked, Crompton & Knowles will explore each cost element. This series will develop a comprehensive evaluation of loom replacement emphasizing cost-cutting intangibles not found in standard replacement formulas.

C & K has pioneered today's most highly controlled weaving with the versatile C-7 line of looms. They have the widest selecton of fabric fields to date of any loom series—terry towels, cotton dress goods, ginghams and fancy filament synthetics. The C-7 provides new benefits in each of the six basic areas to give you the competitive advantage.



WEAVER ACCEPTANCE

MAINTENANCE COSTS

TRAINING TIME

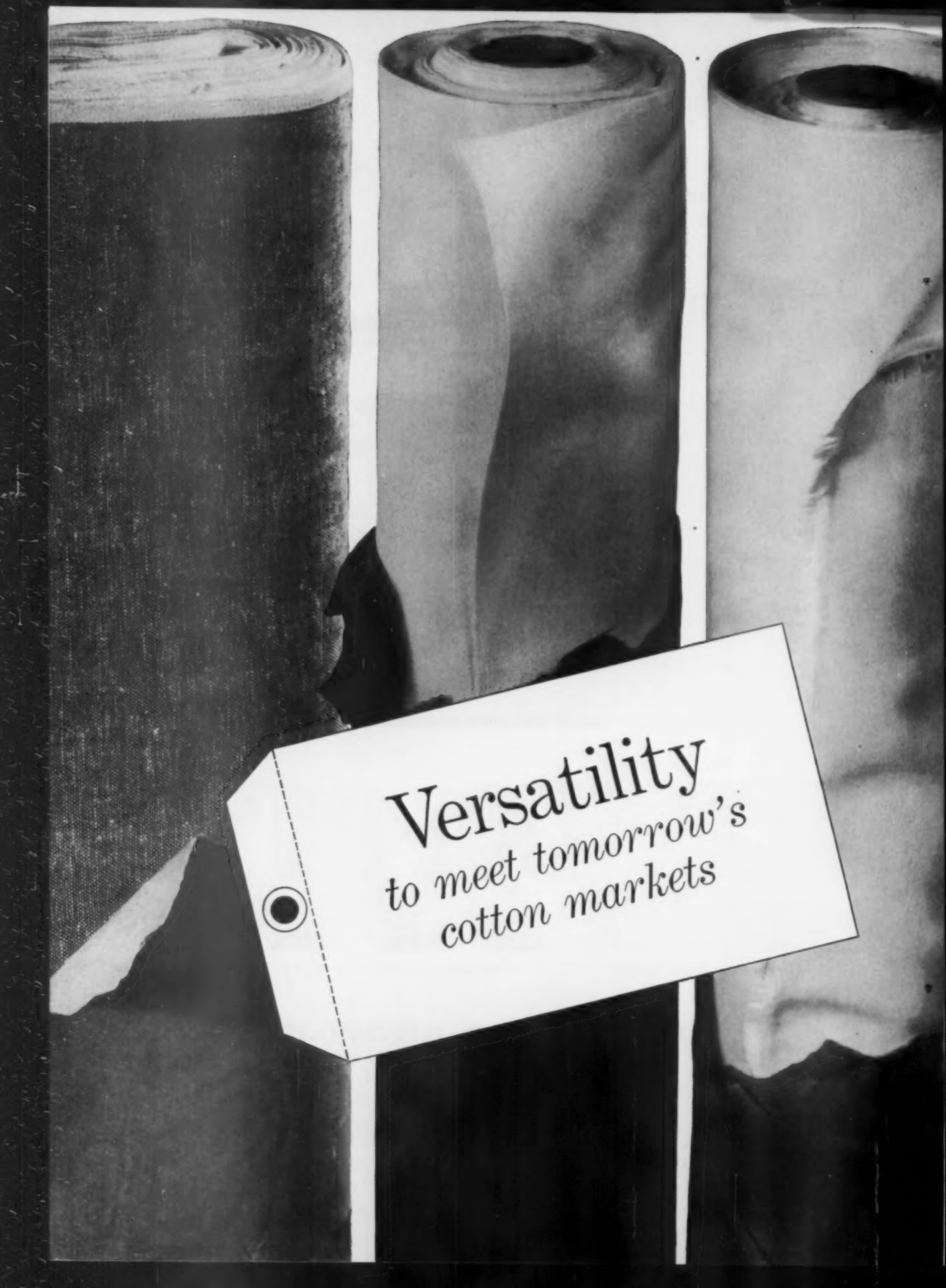
CROMPTON & KNOWLES CORPORATION

WORCESTER, MASSACHUSETTS

C&K

WORLD LEADERSHIP IN AUTOMATIC BOX LOOMS–RESEARCH–ENGINEERING–MANUFACTURE

CHARLOTTE, N. C. / ALLENTOWN, PA. / Crompton & Knowles Jacquard & Supply Co. Pawtucket, R. I. / Crompton & Knowles of Canada, Ltd., Montreal, Quebec


Versatility
to meet tomorrow's
cotton markets

Change governs today's textile production and dictates tomorrow's textile markets. These constant changes hold a promise to the prepared and a threat to the inflexible. The markets demand versatility.

With UNIFIL® Loom Winders your weave room becomes completely market-oriented. UNIFIL's unmatched versatility allows you to meet your market's mood — single shuttle weave rooms can switch from one filling count to another, from one fabric to another, as swiftly as market changes dictate — UNIFIL can increase your earnings per loom in many ways.

UNIFIL permits your mill to wind from any supply economically. Quills are wound and shuttles loaded, empty quills stripped and returned for rewinding — all automatically at the loom. The reduction of inventory and production planning, work scheduling and employee training are further benefits of UNIFIL, accrued by elimination of several operations.

With the trend toward blends in the cotton field, the growing stretch fabric vogue and the dynamic changes that fashion will bring in the future — UNIFIL offers you a unique form of market insurance. For the complete UNIFIL story, including the low initial investment, call your nearest Leesona Sales Engineer — in Boston, Philadelphia, Charlotte, Atlanta or Los Angeles. Or write LEESONA CORPORATION, P.O. Box 6088, Providence 4, Rhode Island. Orient your mill for a larger share of today's cotton fabric market with versatile UNIFIL.

Some of the many cotton mills that are looking ahead with UNIFIL Loom Winders.

BEMIS BRO. BAG CO.
BERKSHIRE HATHAWAY, INC.
BURLINGTON INDUSTRIES, INC.
CANNON MILLS CO.
CONE MILLS CORP.
EXPOSITION COTTON MILLS CO.
PEPPERTON COTTON MILLS
PONEMAH MILLS
RIEGEL TEXTILE CORP.
SPARTAN MILLS
J. P. STEVENS & CO., INC.
TALLASSEE MILLS

Leesona Leads to Better Fabrics

LEESONA

CIRCLE 43 ON READER SERVICE CARD

23.I.10

From raw material to finished product

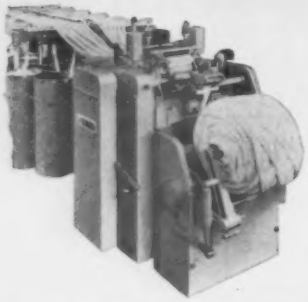
Swiss Textil Machinery

Swiss Association of Machinery Manufactures VSM
Textil Machinery Groupe
General Wille-Strasse 4, Zurich 2, Switzerland

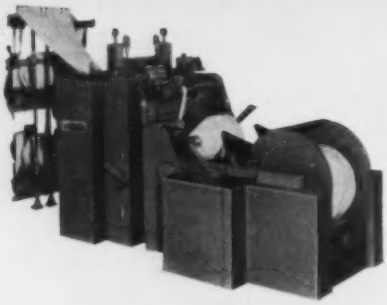
Bär-Luchsinger - Schwanden/GL	Steel Wire Heads · Weaving Loom Frames
Benninger Ltd. - Uzwil/SG	Dyeing and Finishing Machines · Warping Mills
Bräcker Ltd. - Pfäffikon/ZH	Ring Travellers · Weaving Mails · Reed Wire
Bührle - Zurich-Oerlikon	Seamless Hose Knitting Machines
Dubied & Cie S.A. - Neuchâtel	Flat and Circular Wevenit Knitting Machines
Fischer (George) Ltd. - Schaffhausen	Automatic Bobbin Changers for Looms
Fröhlich Ltd. - Mühlehorn/GL	Heddles · Metal Frames · Droppers · Leno-Equipment
Graf & Co. - Rapperswil/SG	Card Clothing · Metallic Wire · Cardroom Machinery
Grob & Co. Ltd. - Horgen/ZH	Heddles and Frames · Leno Equipment · Droppers
Hamel (Carl) - Arbon/TG	Twisting Machinery for all Yarns
Hispano Suiza (Suisse) S.A. - Geneva	Ring Spinning and Twisting Frames · Direct Drive Spindles
Honegger & Co. - Wetzikon/ZH	Roller Bearing Spindles · Fluted Rollers
Hunziker Ltd. - Ruti/ZH	Temples for Looms
Jaeggli (Jakob) & Cie - Winterthur/ZH	Weaving Looms · Yarn-Mercerising Plants
Knitting Machine Works - Schaffhouse	V-Type Flat and Circular Knitting Machines
Lehner (Jakob) Ltd. - Siggenthal-Station/AG	Braiding Machines for Metal Wires and Textile Yarns
Loepfe Brothers Ltd. - Zurich	Optical-Electronic Bobbin Feelers
Luwa Ltd. - Zurich	Textile Air-Conditioning · Pneumafil
Maag Bros. Ltd. - Küsnacht/ZH	Cloth Room Machines · Selvedge Printers · Special Inspection Units
Mettler's Sons (Fr.) Ltd. - Arth/SZ	Winders · Doubling Winders · Singers
Müller (Jakob) - Frick/AG	Ribbon Looms · Battens · Warper for Ribbons
Peter (Konrad) - Liestal/BL	Dyeing and Finishing Machines for all Fabrics
Prematex S.A. - Morges/VD	Ring- and Uptwisters · Hank-Reeling Machines
Rieter - Winterthur/ZH	Spinning and Twisting Machinery for Cotton, Wool and Synthetic Yarns
Ruti Machinery Works Ltd. - Ruti/ZH	Textile Looms and Weaving Machinery
Saurer (Adolph) Ltd. - Arbon/TG	Weaving Looms · Embroidery Machines
Schärer Machine Works - Erlenbach/ZH	Filling Bobbin Winders for all Yarns
Schweiter Ltd. - Horgen/ZH	Automatic Firn and Cone Winders
Spindles, Motors & Machines Ltd. - Uster/ZH	SMM Roller Bearing Spindles
Stäubli Bros. & Co. - Horgen/ZH	Cam Dobbies · Papercard-Cutting Machines
Stutz & Cie - Kempten/ZH	Bobbin-Stripping Machines
Sulzer Brothers Ltd. - Winterthur/ZH	Weaving Machines
Vollenweider (Sam.) Ltd. - Horgen/ZH	Shears · Selvedge Trimmers · Reed Cleaning Machines
Zellweger Ltd. - Uster/ZH	Preparatory Machines · Testing Equipment

THE WARNER & SWASEY INTERSECTING DRAW FRAMES

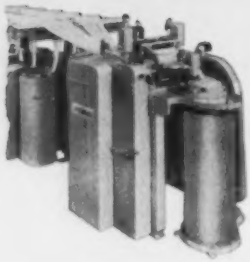
SINGLE HEAD PIN DRAFTERS WITH 6" AND 8"



Single Ball Delivery—Delivers a ball up to 18" x 24", weighing up to 50 lbs.



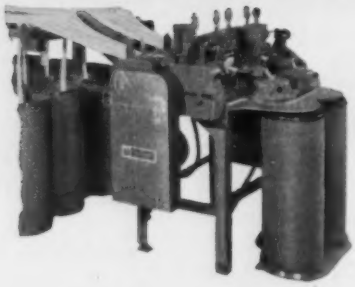
Automatic Ball Doffer—Delivers a ball up to 18" x 24", weighing up to 50 lbs.



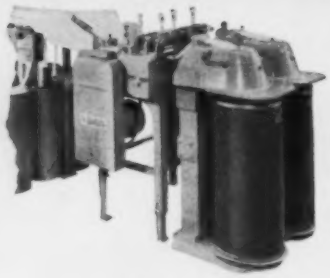
Single Can Delivery—Available with 15" x 36" and 15" x 42" cans.

DUAL HEAD PIN DRAFTERS WITH 6" FALLER

Dual Ball Delivery—Delivers a ball up to 18" in diameter, 10" to 15" wide.

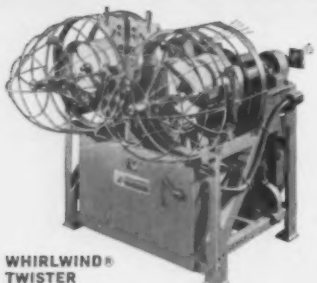


Dual Can Delivery—Available with 15" x 36" and 15" x 42" cans.



Dual Can Delivery—Available with 18", 20" or 24" cans up to 48" high.

OTHER WARNER & SWASEY TEXTILE MACHINERY FOR HIGHER PRODUCTION AND PROFIT



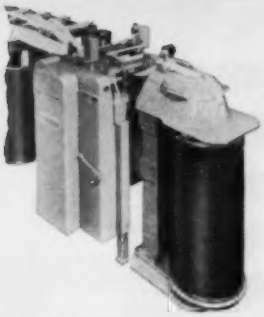
WHIRLWIND® TWISTER WINDER
Twists 2 for 1 and winds up to 30 lb. precision package in one operation at up to 11,000 T.P.M. Produces plyed rope, cords, yarns and twines from Nylon, Dacron, Polyethylene, Polypropylene and other synthetics as well as natural fibers.

PACIFIC® CONVERTER—In one operation converts tow to cut staple ready for drafting; blends synthetics with natural, or different types of synthetics. Cuts staple lengths 3", 3½", 4½" or 6" in either a straight or variable staple diagram at 100 to 130 lbs./hr.

LINE OF PIN DRAFTER®
-MOST COMPLETE IN THE WORLD!

FALLER BARS*

Dual Can Delivery—Available with 15" x 36" and 15" x 42" cans.



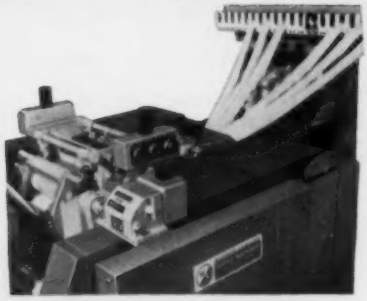
Single Can Delivery—Available with 18", 20" and 24" cans up to 48" high.

Automatic Can Doffer—Available with 18" or 20" cans up to 48" high. *Shown with Servo-Drafter.*

BARS*

Quad Can Delivery—Available with 15" x 36" and 15" x 42" cans.

SERVO-DRAFTER



SERVO-DRAFTER—New single head Servo-Drafter operates at mean speed of 1500 DPM . . . controls weight within 1% . . . corrects infeed variations of 25% in wools, synthetics, blends. Manual or automatic delivery.

Whatever your drawing needs may be . . . French, Bradford, American or Jute Systems, card room, comb room, dye house or blending operations . . . there is a Warner & Swasey Pin Drafter to meet them *profitably*. These machines are a product of the concept that you can do it better, faster, for less . . . with a Warner & Swasey—a concept that's being proved in mills all over the world today.

Built to Warner & Swasey's exacting machine tool standards, this equipment utilizes extensive interchangeability of parts and cuts maintenance operating costs to the bone. If you are looking for ways to improve quality and increase profits, you will be wise to standardize on Warner & Swasey.

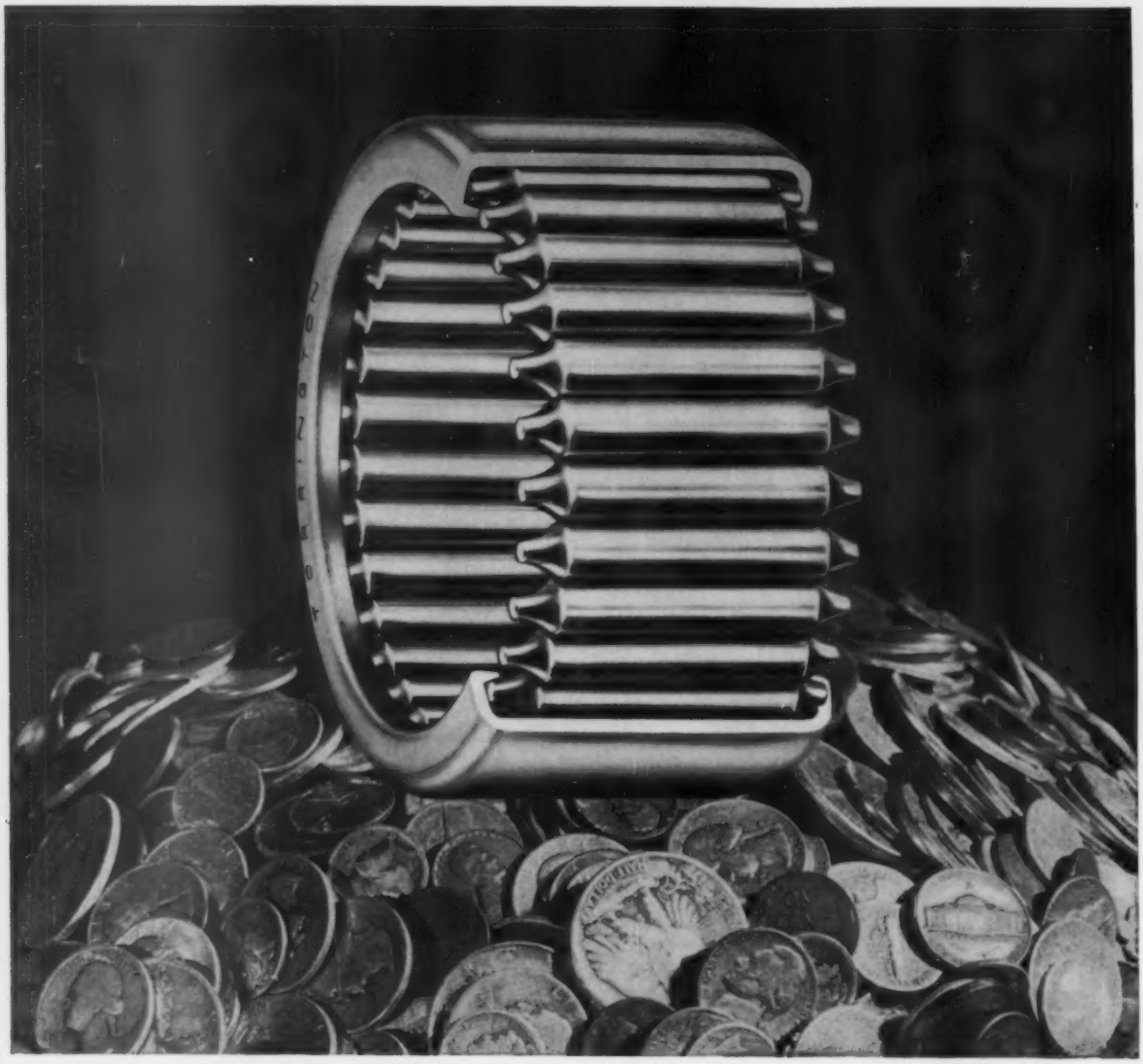
® Reg. U. S. Pat. Off.

TEXTILE MACHINERY SALES OFFICES Main Office, Factory and Export Sales: 5701 Carnegie Ave., Cleveland 3, Ohio • P. O. Box 215, 20 Chestnut St., Needham 92, Mass. P. O. Box 4000, 624 Pecan Avenue, Charlotte 4, N. C. • Suburban Square Bldg., Ardmore (Philadelphia), Pa.

W S ®

*All machines available with can or ball creels.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY



Savings Pile Up With Torrington Needle Bearings

You get performance-plus at a low, low unit cost when you specify Torrington Needle Bearings. A full complement of small-diameter rollers provides a maximum number of contact lines. The result—a higher radial load capacity at a lower unit cost than any other bearing of comparable size or performance.

Precision rollers operate smoothly and efficiently, with a low coefficient of starting and running friction. Positive roller retention is insured by turned-in lips on the outer shell, permitting faster and easier installation or assembly.

Your Torrington representative is an expert on Needle Bearings. For full information on how they can bring savings and improved product design and performance call Torrington—maker of every basic type of anti-friction bearing.

TORRINGTON NEEDLE BEARINGS FEATURE:

- Full complement of retained rollers
- Unequalled radial load capacity
- Low coefficient of starting and running friction
- Low unit cost
- Long service life
- Compactness and light weight
- Runs directly on hardened shafts
- Permits use of larger and stiffer shafts

progress through precision **TORRINGTON BEARINGS**

THE TORRINGTON COMPANY Torrington, Conn. • South Bend 21, Indiana

RS

EMIL ADOLFF

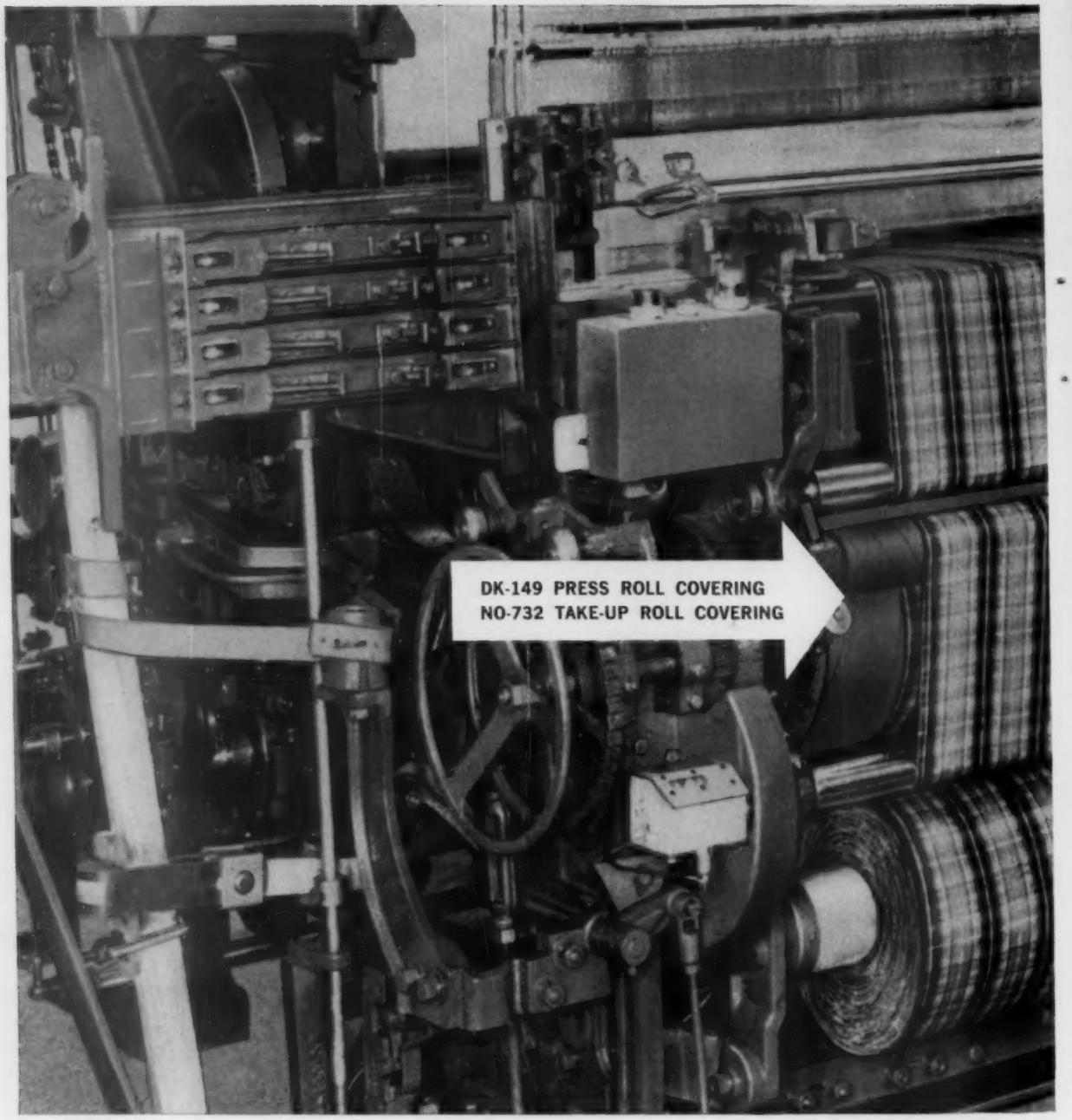
REUTLINGEN/WUERTTEMBERG—GERMANY

We would ask you to write, if you are interested in further technical details.

U.S.A. CENTRAL ORGANIZATION
Textube Corporation, 695 Summer Str., Stamford, Conn.

SUB-AGENTS FOR THE SOUTH
Watson & Desmond, 220 West Fourth Street, P. O. Box 1954, Charlotte, N. C.

SUB-AGENTS FOR CANADA:
Crowther Limited, 212-214 Victoria Ave., Westmount, Montreal P.Q.



These Armstrong roll covers won't mark finest fabrics

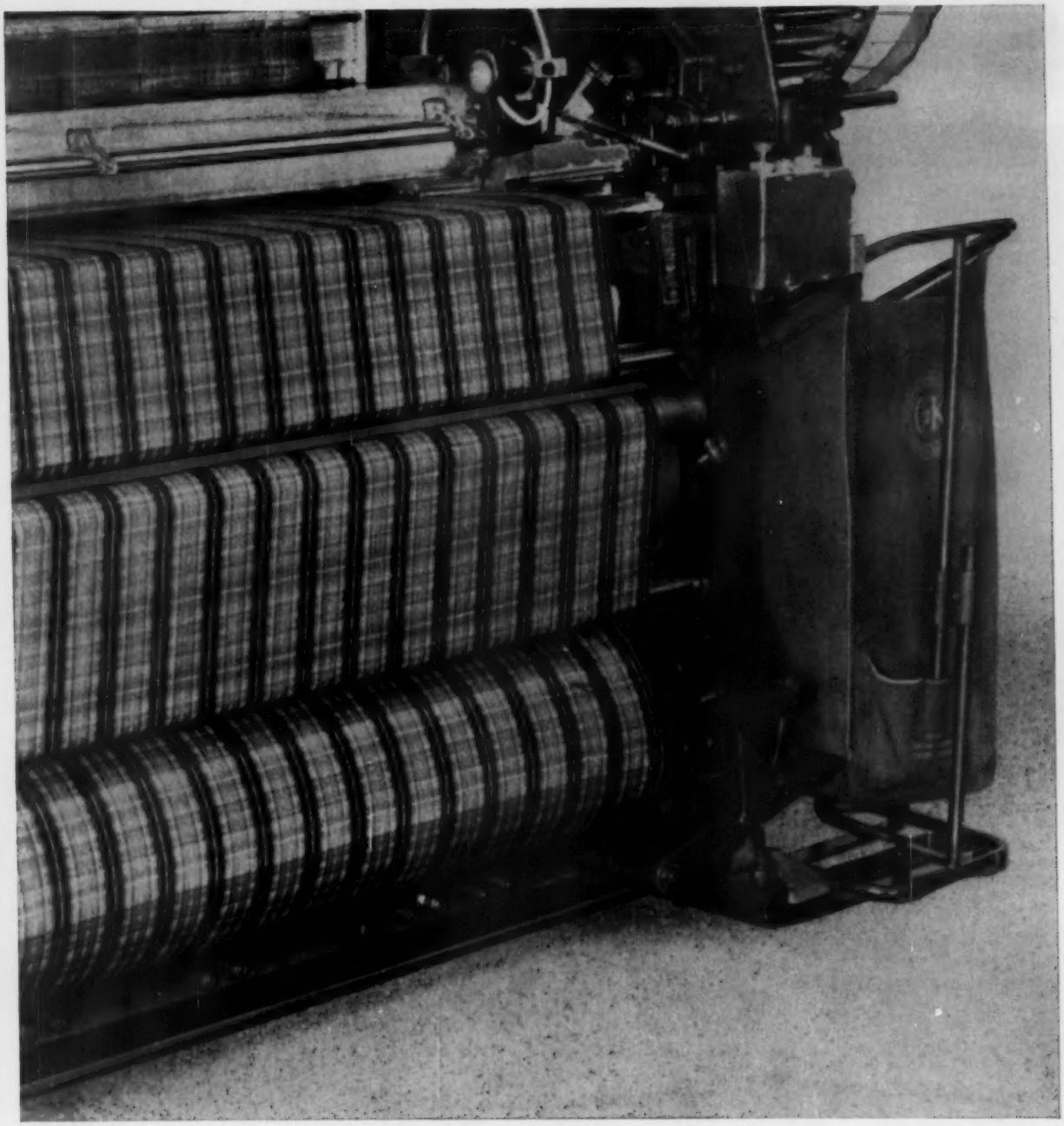
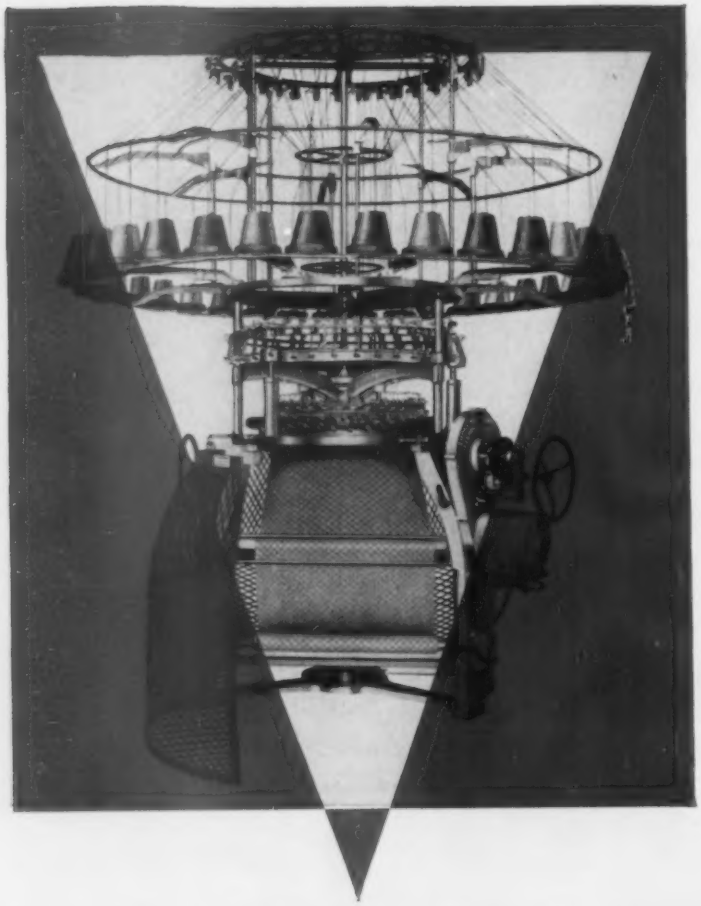


Photo courtesy of Crompton & Knowles, Inc.

When you weave loom finished or other fine fabrics, you can't afford marks or creases that can cause seconds. • Avoid that risk—and still maintain good control of the fabric—by using Armstrong Accotex synthetic rubber roll covering on loom take-up and press rolls. • Accotex NO-732 Take-Up Roll Covering is specially compounded to give up to twice the holding power of ordinary rubber. It provides a firm, steady grip even on high-count fabrics. • Accotex DK-149 is a sponged-rubber-and-cork material for press rolls. It is springy and resilient and maintains take-up tension uniformly from selvage to selvage. It won't pack down or develop high spots even after years of service. • Test this combination of Accotex take-up and press roll material on your looms soon. Your Armstrong man will be glad to make the arrangements. Call him or write Armstrong Cork Company, Industrial Division, 6604 Dauphin St., Lancaster, Pa.

Armstrong LOOM SUPPLIES

SUPREME



Double-Pique Fabric Up To 20 Yards Per Hour

Other Fabric Up To 40 Yards Per Hour

Write for free booklet on this important advance in the interlock field

UNEQUALLED VERSATILITY

30" dia., 36 feeds in cuts through 16 needles per inch—produces "Double Pique" and "Grenadine" fabrics; "Blister" stitches, plus a tremendous range of other patterned rib or interlock.

50% GREATER PATTERN AREA THAN ANY OTHER MACHINE

Plus a spectacular range of patterns and textures. Wheels available for special pattern fields, (L shaped, argyles, etc.).

SOME OTHER MODELS IN THE SUPREME LINE OF PROFIT-KNITTING MACHINERY—

MODEL SAI-PP—Striped and Patterned 1 x 1 Rib—Also Swiss Rib and Interlock

MODEL MJ/N—Wide Diameter & Body Size Jersey

MODEL SAAF-C/N—Plain, Variable Striped and Patterned Jersey

MODEL MLVP/N—Pile, Loop, Plush, Plaited Patterned and Velveteen

MODEL BRW—1 x 1 and Half Cardigan Plain and Patterned Bulky Fabrics

MODEL ROF/N—Jacquard-Type Floatless Patterns

MODEL IRW-2

Unsurpassed Versatility In

"DOUBLE-JERSEY"

"DOUBLE-KNIT"

Rib And Interlock Production

For further information or a demonstration of this machine in action, contact Supreme.

SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
Monroe Machinery Sales Co.
P.O. Box 342, MacArthur Circle, Monroe, N. C.

SIMPLIFIED CONTROLS

Easily adjusted to control both fabric elasticity and surface "birds-eye" effect. Can be readily set to produce pique fabrics in Swiss, French or other constructions.

DUAL RACEWAY

Needles of either raceway may be independently set in knit to tuck or knit to welt positioning.

AVAILABLE WITH

(1) "ROLL-O-MATIC" FEEDING DEVICES —Permit use of wide variety of yarns—Maintain uniform tension at knitting points, (2) VARIABLE SPEED MOTOR—For R.P.M. changes at the turn of a lever.

▶ *Plus All SUPREME Standard, Mill-Proven Construction Features*

SR-109

VISIT SUPREME BOOTH #125—KNITTING ARTS EXHIBITION—ATLANTIC CITY—APRIL 24-28

CIRCLE 53 ON READER SERVICE CARD

Pending the Upturn

IT'S NO NEWS to you that activity in the textile industry has dipped in the last several months. If you haven't noticed it in your own mill (and what mill executive hasn't?), take a look at TEXTILE WORLD's Index of Textile Manufacturing Activity on page 1 of the buff-colored news section of this issue—or listen to some of the hurt noises your associates in the industry are making.

Well, if the dip isn't news, why bring it up now?

Three reasons, as follows:

1. We think it needs saying, again and with conviction, that this dip doesn't spell doom. If things look tough now, you have only to go back to April 1958 to find a still tougher time. In that month the industry's index of activity dropped to 96. Today it's some 10 points higher—and only a baker's dozen points or so below its all-time high (119 in August 1959). So we take no stock—and we don't believe you should—in recent gloomy predictions that imports (or anything else now in view) will bring sure death to this strong, ingenious industry.

2. We think some perspective is important. Other industries, like the textile industry, are hurting too. This doesn't make it any less urgent that the textile industry take corrective measures, nor does it make a quick upturn any less desirable. But it does suggest that the textile industry's situation is not altogether unique in American industry today. It also suggests that the textile dip is, at least in part, a reflection of the general business situation and that, when business in general improves, so will the textile industry. Indeed, from this standpoint there may be some question whether the textile industry's case, though special in some degree, is special enough to justify so much recent "poor mouth" talk in public places.

3. The upturn is coming. Not next week. Not next month. Maybe not until well after midyear. But it *is* coming—perhaps sooner than you think. You can (and must) speed it on its way. How? Three well-known, business-tested ways that bear repeating now:

- Putting new muscle in your selling. The right products at the right time for the right people. Close contact with markets, swift reaction to market changes, prompt delivery.
- Driving hard at cost improvement. This way, you can boost your profits, or trim your prices—or do a little of both.
- Speeding investment in faster, more efficient, bigger-volume, nearer-automatic machines.

And all this brings us to our fourth reason for talking about the current dip. In fact, it's what started us off in the first place:

4. With your mill on a slack schedule there's time to begin doing some of those things you've been thinking about but just haven't got around to.

Pending the upturn, what can you do? Well, for example, you can . . .

. . . *install* that preventive maintenance program you want—set up the systems and routines, design the paperwork, train your supervisors.

. . . *set up* a management development program so your company will have a pool of good men to draw on for future management jobs.

. . . *devise* systems to measure and evaluate management performance.

. . . *re-layout* your mill for better flow of in-process materials.

. . . *analyze* your manpower utilization and find ways to improve it.

. . . *modify*, adapt, and update your machines and equipment.

. . . *re-light* mill areas to provide more footcandles for workers.

. . . *paint up*, spruce up, clean up.

. . . *and launch* a dozen other projects that will bring you up to fighting trim, ready to move swiftly when you sense the coming upturn.

Henry G. Lord, Founder and Friend

HENRY GARDNER LORD, founder of this magazine, died March 9 in his 96th year. We mourn him as our friend, and we gratefully acknowledge our debt to him as a leader in the textile industry and in businesspaper publishing. For those who worked with him, he held up exacting standards of professional performance. For the businesspaper-publishing industry, he helped establish a code of honor and sound practice that has long been a guide for TEXTILE WORLD and the McGraw-Hill Publishing Company.

Mr. Lord was born at Boston May 30, 1865. He came of a seafaring family whose clipper ships fell prey to Confederate privateers during the Civil War. In his earliest youth close relatives of his family opened a 6,000-spindle cotton mill at West Kennebunk, Maine, to manufacture fishnets. In that mill Mr. Lord first learned about textile manufacturing.

In 1888 Mr. Lord teamed with Walter B. Guild to found TEXTILE WORLD. A decade later his prospering journal absorbed the *Industrial Record*, the roots of which go back to 1867. Thereafter, in the course of years, he merged four other magazines into TEXTILE WORLD.

From the first, Mr. Lord was an innovator and crusader in businesspaper publishing. His vision strengthened his native gift of leadership. He was fearless in coming to grips with the issues affecting the textile industry. Under his leadership TEXTILE WORLD was always in the vanguard—always among the first to announce and act upon high principles that eventually became standard for ethical businesspaper publishing. It was one of the very first businesspapers to publish sworn statements of its circulation as a basis for pricing advertising space. It was a charter member of the Audit Bureau of Circulation. It was among the first to publish a regular monthly department listing and describing new machinery and products purely as news, regardless of advertising considerations or influences.

Mr. Lord was long a vice president and a director of the McGraw-Hill Publishing Company, and for many years was chairman of its finance committee. He remained active with his company until within a few weeks of his death.

We who knew Mr. Lord will long remember his shining integrity, the rich wisdom of his years, his warm humor, and his unfailing kindness. We shall also remember his radiant optimism, which glows in the lines that he wrote for his Christmas card in 1960, in his 96th year:

Now Ninety-Five is retrospective,
And Ninety-Six is the new objective.
The going is getting rather rough,
For some days I don't have breath enough.
But I'll jog along in my wheezy way—
And may keep puffing until next May.

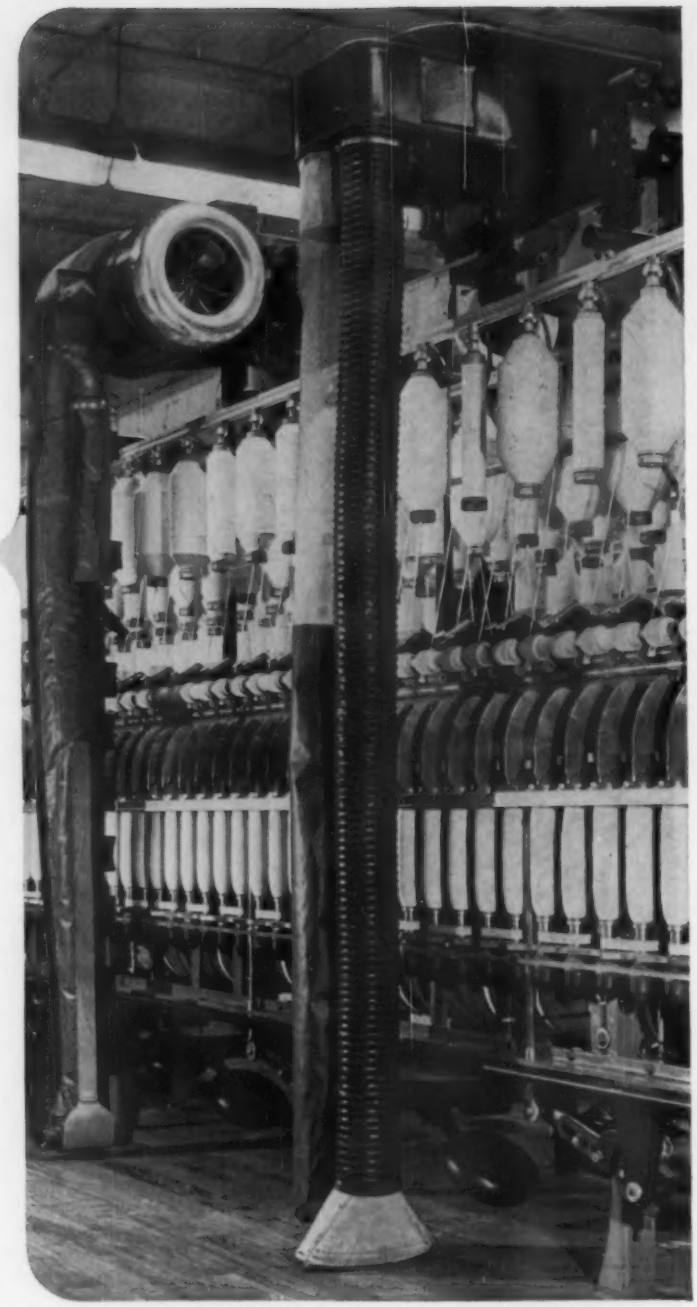
Mr. Lord didn't make it "until next May." But the vision that guided him throughout his career will be a beacon for his friends and associates in the years ahead.

Get peak cleaning efficiency on frames, underframes, overhead and alley areas with

COMPLETE COVERAGE FEATURES

of CROSS-JET FRAME CLEANER

and VACU-PAK FLOOR SWEEPER with automatic "Stop and Go" protection



Sweeper automatically stops on contact—then automatically re-starts when free of obstruction.

1. Provides protection to frame and spindles from trunk swinging free of obstacles and back into frame.
2. Provides protection for operator to work efficiently without interruption by traveling trunk.
3. Provides protection against damage to trunk by obstacles in its path.
4. Provides protection against accidents and operating time loss.

Bahnson

AIR-O-MATION

THE BAHNSON COMPANY · WINSTON-SALEM, N. C.

Management Bulletin

Things you should know about . . .

Tax Law Change . . .

. . . in the offing is likely to make capital spending more attractive to industry by means of more realistic depreciation regulations. One memory that lingers in Washington is that following the loosening of depreciation rules in 1954, there was a tremendous outpouring of funds on capital goods that sparked the 1955-57 boom period. Prospect: a further depreciation liberalization to make it easier for management to write off equipment quicker. Short-run result: lower profits because of higher write-offs. Long-run result: modern, low-cost plants able to compete even better in American and foreign markets.

Gold and Trade

Lost in all the discussion of the gold outflow is an important fact: American industry is exporting about $5-billion more a year in goods and services than it imports. In textiles (including raw cotton), total for 1960 was $1.6-billion in exports, against about $1-billion in imports. (Cotton accounts for more than half of textile exports.) Adverse balance of payments is due to military spending, and to grants and loans overseas. Of somewhat lesser importance: Private investment overseas, particularly for short-term purposes, has also put pressure on America's balance of payments.

Controlling Quality

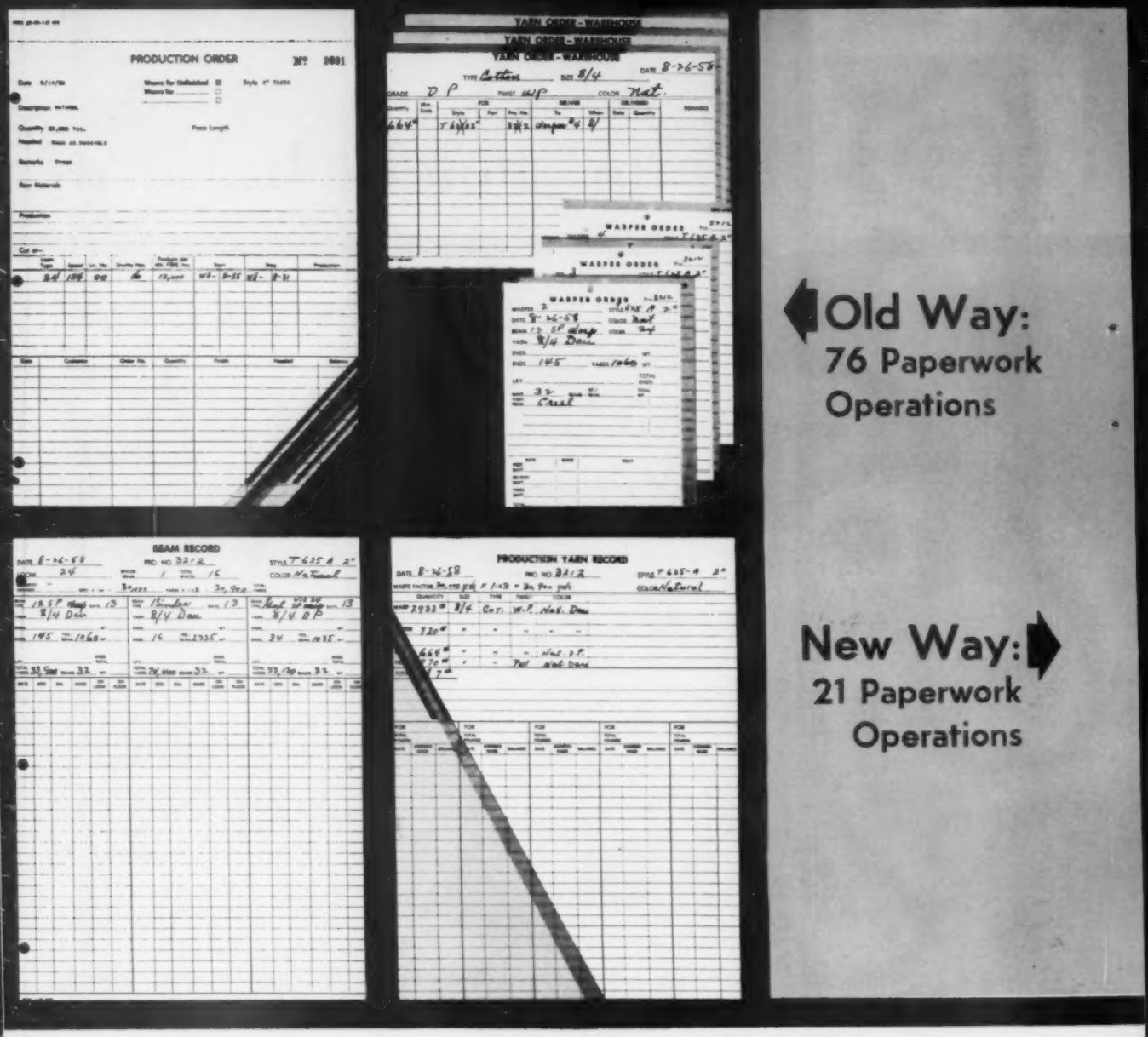
New edition of book called *Quality Control,* by Professor Norbert L. Enrick (University of Virginia), lists valuable principles, easy ways to apply proven techniques of scientific quality control. Of special interest to textile-mill management are chapters on statistical tolerancing, evolutionary operation, management aspects of quality control, and special charts for old or worn equipment. (The Industrial Press, New York. $5.50)

Supervisory Training

Now available—complete package of films on training men to lead. Subjects covered: giving orders and instructions, listening, motivating workers to higher productivity, leadership. Sample of contents: seven steps in the order-giving process, importance of listening, running a "taut ship" for higher productivity. Write Modern Management Films, 1231 24th St., N.W., Washington 7.

Control–The Catalyst

CAPSULE REVIEW: New book (*Executive Control—The Catalyst,* by William Travers Jerome III) shows how executive control is the driving force of industry. Also shows that control isn't just a bag of management tricks. Sample of contents: Planning, organizing, and communicating. Measuring and comparing performance. The meaning of mistakes. (John Wiley & Sons, New York. $6.95)

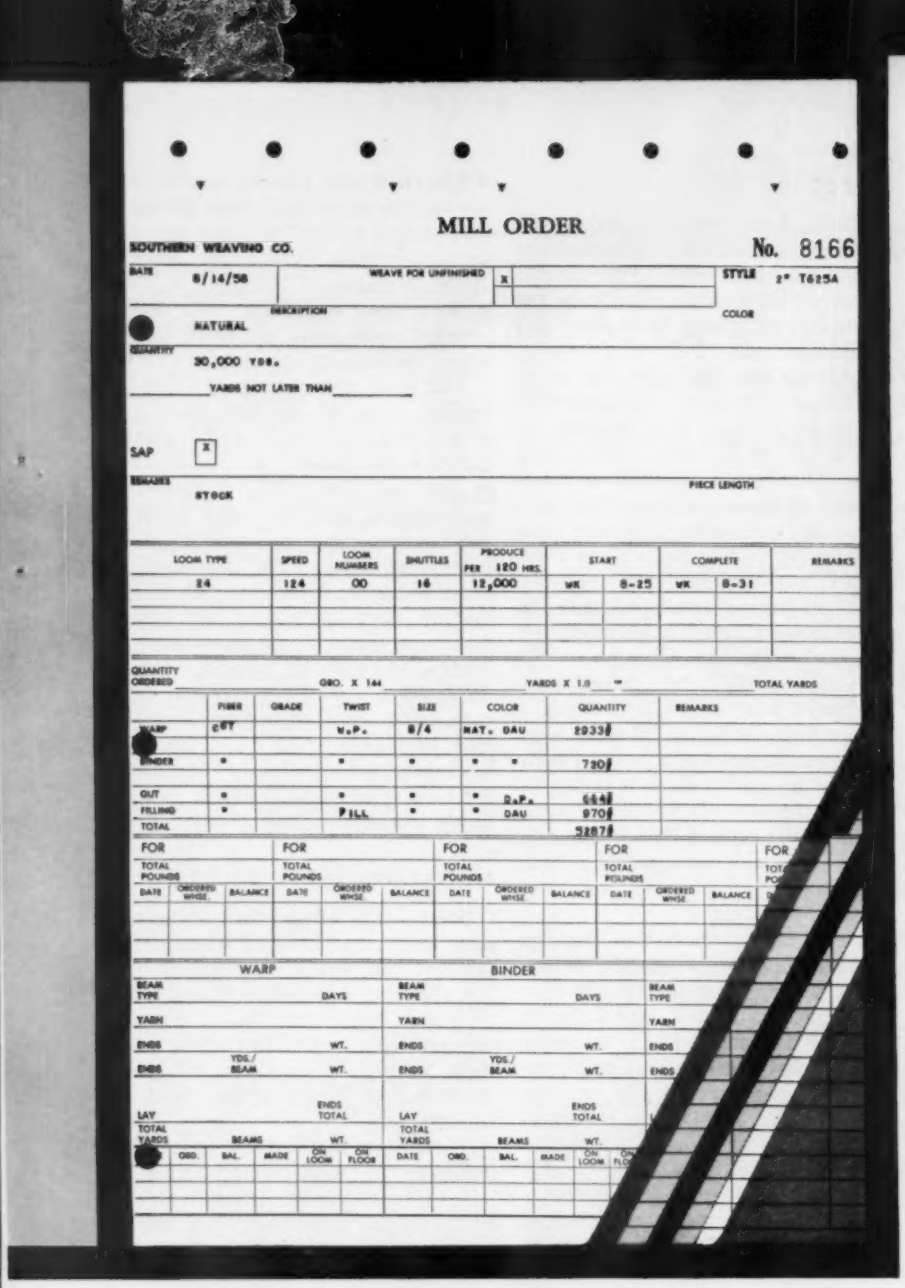


How to Hit Mill Office Costs

Each dollar you save on office work is worth 30 sales dollars to your profit-and-loss figures. That's why you'll find this expert's advice especially useful in today's cost-price squeeze.

SCAN THOSE old forms in the illustration above. You can see in an instant why today's office costs are sky-high. Scan the new form (right) and you'll see the cost-cutting possibilities. One expert goes so far as to say: "The average small businessman wastes 65% of what

By EMMETT B. SIMPSON
Management Consultant
Greenville, S. C.



MILL ORDER

SOUTHERN WEAVING CO. No. 8166

DATE 8/14/58 | WEAVE FOR UNFINISHED X | STYLE 2" T625A

DESCRIPTION: NATURAL | COLOR

QUANTITY: 30,000 YDS.

YARDS NOT LATER THAN

SAP [X]

REMARKS: STOCK | PIECE LENGTH

LOOM TYPE	SPEED	LOOM NUMBERS	SHUTTLES	PRODUCE PER 120 HRS.	START		COMPLETE		REMARKS
24	124	00	16	12,000	WK	8-25	WK	8-31	

QUANTITY ORDERED ORD. X 144 YARDS X 1.0 = TOTAL YARDS

	FIBER	GRADE	TWIST	SIZE	COLOR	QUANTITY	REMARKS
WARP	CBT		W.P.	8/4	NAT. DAU	2033#	
BINDER	"		"	"	" "	720#	
CUT	"		"	"	" D.P.	664#	
FILLING	"		FILL	"	" DAU	970#	
TOTAL						5287#	

FOR			FOR			FOR			FOR			FOR		
TOTAL POUNDS			TOTAL POUNDS			TOTAL POUNDS			TOTAL #'S/POUNDS			TOTAL POUNDS		
DATE	ORDERED W'HSE	BALANCE	DATE	ORDERED W'HSE	BALANCE	DATE	ORDERED W'HSE	BALANCE	DATE	ORDERED W'HSE	BALANCE	DATE	ORDERED W'HSE	BALANCE

WARP			BINDER			
BEAM TYPE		DAYS	BEAM TYPE		DAYS	BEAM TYPE
YARN			YARN			YARN
ENDS		WT.	ENDS		WT.	ENDS
ENDS	YDS./BEAM	WT.	ENDS	YDS./BEAM	WT.	ENDS
LAY		ENDS TOTAL	LAY		ENDS TOTAL	
TOTAL YARDS	BEAMS	WT.	TOTAL YARDS	BEAMS	WT.	

DATE	ORD.	BAL.	MADE	ON LOOM	ON FLOOR	DATE	ORD.	BAL.	MADE	ON LOOM	ON FLOOR

Where They Begin

he spends for paperwork. . . . He spends $1.25 in checking paperwork to save 87¢."

There's no doubt that office costs are way out of line in most mills and plants today. Surveys and thorough research by the Records Management Institute (in cooperation with Columbia University, the American Management Association, and Adelphi College) bear out the suspicion that management is paying dearly for its office operations. Of course, management must keep records and reports on hand if it is to do it job. But these documents should be more informative—they should tell more than they do today. At the same time they should be less bulky. (Look at the new form above, to see how you can meet both these goals at the same time.

Lay down this rule for yourself and you'll be on the way to saving a great deal on office costs: Challenge every record and report prepared in your office to be sure that it's worth every cent you're paying for it. And make sure that each record is telling you exactly what you have to know to manage your office efficiently.

Sometimes textile management men are surprised to discover that reports are often cluttered up with too many statistics. For example, not long ago, the Simpson organization analyzed the cloth-production report of a small mill. This mill, each day, prepared seven copies of a report that had four typewritten pages. Of the 76 lines of information, only one was pertinent. That line indicated that an extreme variance had developed in one of the styles. At this point the mill superintendent was the only one concerned about the variance. It was his responsibility to see that the condition was corrected. One or two of the other recipients filed their copies of the report unread. The others simply accumulated them in dusty piles. None of the six copies was used constructively.

FINDING THE SOURCE

The source document for the cloth report was a copy of the bale ticket, which was attached to the bale. This ticket contained all the information needed by the superintendent to correct the condition. All of those receiving copies of the report agreed that—except for the superintendent's copy—the report served no worthwhile purpose.

The superintendent said that he would prefer to receive a report that contained a record of variances only. Everyone agreed that the variance information could be obtained just as well from a copy of the bale ticket. The mill discontinued the daily typewritten report. Now, the inventory clerk simply circles the variance with a red pencil and forwards the bale ticket copy to the superintendent whenever there's an extreme variance in any style of cloth. This change is saving about $6 a day in clerical time—plus the cost of the printed form.

. . . Turn the page

The costs of running your mill office may seem too small a fraction of your over-all costs to worry about. Don't be fooled. Remember this figure whenever you are tempted to discount the importance of office cost-cutting. Every dollar you save on office costs is worth 30 sales dollars in boosting profits.

The average office certainly offers many opportunities for innovation and cost reduction. Although there are numerous reasons why office costs are too high, let's consider just two—overburdened office managers and untrained workers. In far too many instances the office manager is really no such thing. He is so burdened with detail that he has no time at all to manage—to plan, direct, and control.

MANAGING IN THE DARK

During the past four years the Simpson organization has reviewed the operations of more than a dozen offices in the Southeast. Invariably, in each office, the office manager says that he could do the work the company had hired a management consultant to do—if he just had the time.

Though the office manager may hire and fire and be looked upon as the boss, too often the office actually runs with a minimum of real management. The office manager has little or no time to plan, analyze, or improve operations. When he does attempt improvements it is often by trial and error. "We reduced our staff last week by four," a controller-office manager recently said. He continued, "We'll have to hire one or two later on if it doesn't work out. But I'm going to try it this way for a while and see what happens."

Another executive, in an insurance office with a staff of 175, said: "Office management is really secondary with me. I'm the assistant secretary of the company. I also function as controller. As controller, office management is one of my responsibilities. But before I ever get around to any real managing, here is what I have to do: As assistant secretary of the company I am responsible for coordinating and directing the activities of all our agents. I must reconcile the agents' accounts, initiate all correspondence from the home office to the agents, code all instruments, coordinate the activities of agents, field office and adjusters, and . . ."

In still another office, the office manager's primary responsibility was purchasing. This required almost all of his time. Here, too, the office got along with a minimum of management. The purchasing agent-office manager had advanced to his position by hard work, native ability, and seniority. He had had no training whatever in management, human relations, or clerical-work simplification. No special controls such as record management were in effect. When a plant foreman or a department head believed he needed a new form or record he simply made a sketch of what appeared to meet the need and forwarded it to the purchasing agent. In due time another stack of paper was added in the stationery supply room.

You can see how this situation added unnecessary expense if you look at the forms in the illustration, p. 58. It took nine different sets of documents to get an order into production: (1) Production order; (2) beam record; (3) yarn order — No. 1; (4) yarn order — No. 2; (5) yarn order — No. 3; (6) warper order — No. 1; (7) warper order — No. 2; (8) warper order — No. 3, and (9) production yarn record. These forms made up a total of 23 pieces of paper, plus 14 pieces of carbon paper. Three different sizes of post binders and storage and filing facilities were required. To purchase, receive, store, issue, pay for, maintain records of, and process these 9 different forms required a minimum of 76 paperwork operations. Cost of the forms was $679.65.

ANALYZING TO CUT COSTS

An analysis of this operation, which was completed with the cooperation of the purchasing agent-office manager, revealed three important things:

- *Not more than 10% of the total area of any form was used* in over 96% of the orders studied.
- *The clerk who entered handwritten data on the original order almost always had to call the order typist* for information before the entry could be made.
- *There was no reason why the original typist could not enter data* when she made up the order.

The form was redesigned (illustration, page 59 so that all the information contained in the nine different documents was included in just one form. The procedure was revised, and the order typist was moved into the production-scheduling office. She now completes the loom scheduling and production yarn sections of the new form in addition to the production-order data originally entered. The 76 separate operations required in connection with the original forms have been reduced to 21—a workload reduction of 72%. The new forms cost only $223.43—a two-thirds reduction in cash outlay.

MANAGING INEPT PEOPLE

Most newly hired office workers have received no training whatever. At best, the typical new employee has received a mediocre education at a high school that has a commercial department. In fairness to these eager youngsters, they sincerely believe they have had "business training."

They have received no training whatever in work simplification, records, management, or job analysis. For the most part, they feel that if they keep reasonably busy, do as they are told, and don't laugh and talk too much with the others, they are doing what is expected of them. Having received no guidance in how to evaluate what they are doing or in how to improve the job, they simply accept the procedure explained to them when they start on the job as being the only procedure. Their one concern is to do the job as they are told.

Consider the example of the South Carolina knitting mill that used to use 1,359 typewriter strokes (including allowances for line spacing, hand positioning, and so on) to complete a single sales order. After work simplification, the mill can now do the same job with only 726 type strokes—a workload reduction of 46%.

This was just a simple on-the-spot improvement. Later the form was redesigned. Further simplification of the information content will result in additional savings.

Yet when the Simpson organization first reviewed this operation with the sales-order typist and suggested that she would save time if she used "dz" instead of "doz." and if she used ditto marks instead of typing the full word each time, she said she was typing it the way she had been told to type it six years before. That was the way she was going to keep on typing it. Later—after the improvements had been made—when she was told that she was now completing the order with 46% less effort, she replied: "What's the difference—I still have to be here until five, don't I?"

Such a lack of understanding in a loyal, conscientious worker explains why productivity in the office has not kept pace with the factory. It also shows why more training in the office is needed.

Compare the attitude of the order typist mentioned above with that of another typist in a different office. At the close of a work simplification session, an order clerk raised her hand to ask this question: "If I brought you some of the orders I have to type, could you show me how to cut down on the work? I know there must be a better way than I am doing it, but I don't know exactly how to improve it." This girl accepted suggestions for simplifying her work enthusiastically. When she got the approval of her supervisor, she promptly put them into effect. The incident immediately created a rivalry in the office and other operators were soon asking for help in simplifying their workloads.

DEVELOPING TEAMWORK

Management would take a great step forward if it could develop this kind of all-out spirit of teamwork among office employees—the will to out-produce, out-think and out-sell every competitor in the field. Such an organization would not need to worry about labor relations, public relations, or human relations. Harmony, success, and goodwill would abound everywhere.

Many office workers are not only willing but are eager to help reduce costs and improve operations. But too often management takes the attitude that "when I want your opinion, I'll ask for it." So Tillie and Joe, thus set down, feel that they are not getting paid to think but are just supposed to do their monotonous little job and keep their ideas and opinions to themselves. It is not surprising that even those employees who are qualified to do so are reluctant to offer constructive criticisms.

It's a mistake to assume that only at the management level can intelligence and wisdom be found—that only management is interested in having the company operate on a profitable basis—or that only management people can develop ideas that will bring about more efficient methods. Many excellent ideas to improve office procedures and reduce office costs have come from the minds of office workers.

No one is better qualified to improve an operation than the worker performing the operation—if he has been properly trained and if he knows he will be "recognized" for his contribution.

What a Cut in Office Costs Will Do for Your Profits

Assume an established clerical workload of 1,000 manhours: At an efficiency rating of 50%—which is a pretty fair average. Fifty employees will be required to do the job in a 40-hour week.

50×40 hours=2,000 hours a week to be paid for at an average wage of $1.75 per hour (the national average for clerical employees).

2,000×$1.75=$3,500 weekly payroll.

Assume a workload reduction of 15% through work simplification and employee training (the minimum you should expect if major improvements have not been made in the past year):

2,000 hours—300 hours (15%)=1,700 hours to be paid for.

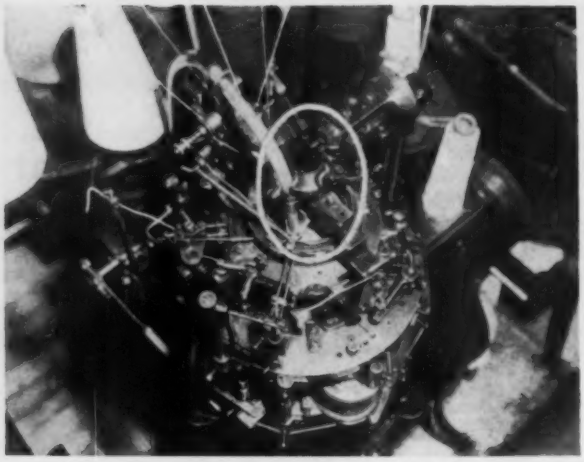
1,700×$1.75=$2,975.

3,500—$2,975=$525 reduction in weekly payroll.

$525×52=$27,300 annual reduction in direct payroll in the office.

$27,300 plus $5,460 fringe benefits (20% of direct payroll)=$32,760 estimated annual payroll reduction.

At a net profit of 3% (which is about average for the textile industry for the 1958–59 period, according to the Federal Trade Commission report for the fourth quarter of 1959), **this reduction in expense is the equivalent of a sales increase of more than $1,000,000.**



YARN CLIPPER (left and above) is brand new addition to knitting machine. It trims while machine knits.

With a non-stop program for improvements in machines and machine utilization, plus a watch-everything production-control system, this giant producer of men's socks racks up impressive dollar savings. To show you how it's done, here's a . . .

2-Part Success Story—
Part 1: Better Machines, Better Methods

THE PHOTOS you see on these two pages illustrate a story of constant improvement of machines and machine utilization. The captions (and the text below) tell the story. It's a story of ever-improving efficiency and cost savings.

Where's all this? It's at Harriss & Covington Hosiery Mills, Inc., High Point, N. C. Harriss & Covington (H&C) turns out 5,000-doz. men's socks per day. Employees: 400. Knitting machines: 422.

Take just one example from the photos—the yarn clipper (above). It's H&C's latest machine improvement. It's now installed on all knitting machines that make mock-wrap fabrics (cut floats). Its inventor: F. C. Morehead, H&C's superintendent.

Savings from installation of yarn clippers (now manufactured by Knitrol Div of Uster Corp.) are big. So big that H&C now has put half of its production on mock-wrap patterns. This means that 210 of H&C's 422 machines are equipped with the yarn clippers.

How does the yarn clipper pay off? Listen:

• **Money saved**—H&C realizes a direct saving of 5½¢ on every dozen pairs of socks knitted with the Knitrol Clipper 1-C. Formerly, H&C used 28 employees with hand trimmers to trim socks. Average cost: 7½¢ per dozen. With trimming now at the knitting machine, H&C eliminates 90% of this hand trimming and needs only two full-time employees for the hand operation.

Even so, H&C has not eliminated the entire cost of work done on the hand-trimming machines. Hand-trimming included turning the socks. Turning machines now do this job at 2¢ per dozen. The over-all net saving therefore is 5½¢ per dozen.

• **Floats trimmed neatly**—With the clipper, yarn can be trimmed as close to panels as H&C wishes. Saving: 40% on decorative yarns.

• **Machine performance upped**—This is because of the great reduction in breakage of needles and jacks.

• **Output boosted**—Machines turn out more socks because the new clippers need no maintenance. The first six units have run 20 months without attention. Under the former system, separator blades had to be sharpened and replaced often.

Now, for Part 2 of the H&C success story—Production Control—please turn the page.

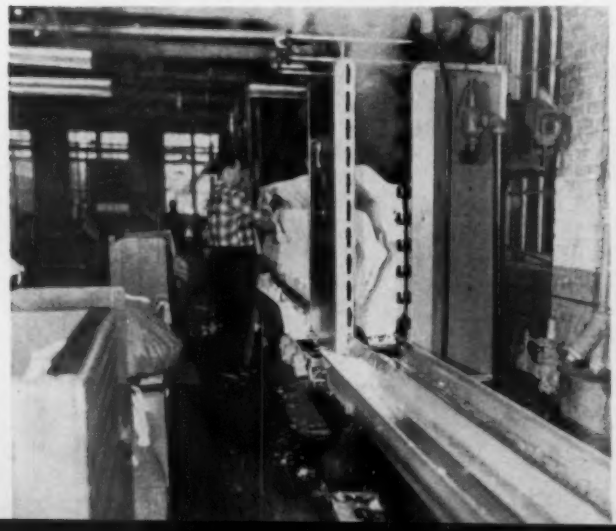
INSPECTION takes place as socks come from machine. Mock-wrap knitters tend 20 to 30 machines.

MAINTENANCE involves knitting fixer, who blows off machine as a part of daily maintenance of 30 machines.

HIGH OUTPUT, 45-doz. socks per operator per 8-hr. shift, marks looping operation, prime method of toe enclosure.

NEW METHOD of seaming is used on limited production with eight machines. Operators turn out 125 dozen per shift.

PREBOARDING is given all stretch socks. Two employees preboard 2-doz. socks every 45 seconds at this machine.



PACKAGING system enables each girl to pack 340 dozen per day. With old method, girl averaged only 100 dozen.

FIVE (count 'em) employees run production control department. Department adjoins main office and superintendent's office.

2-Part Success Story—. . . *Begins on page* 62

Part 2: Can't-Miss Production Control

BIG in coverage and results. But small in size—and uncomplicated. That's the way to describe the production control department at Harriss & Covington (H&C).

How big in coverage? Well, it reaches out to include quality control, shipping, and payroll.

How uncomplicated? With just three types of printed form (illustrations facing page) H&C schedules and controls all production, shop goods, and calculates payrolls for all production employees (except those in the dyehouse).

And what does H&C get from its production-control system? It gets:

- A written "Progress Record" every day, showing the position of each order of socks in knitting, looping, and dyeing.
- A complete report of paired socks twice a day—noon and 3:30 p.m.
- A weekly report on total stock in storage racks.
- A weekly report to the comptroller on stock and production.

3 STEPS TO START

The production department is inside the mill, adjoining the main office and Superintendent Morehead's office. This way, all people with a stake in production control are within reach of each other. Head of the department is Mrs. Theodosia Mull, a long-time H&C employee.

Here's how production control gets underway at H&C:

1. An order comes from a salesman to the front office of the mill. A copy girl makes a work order.

2. The work order moves to the shipping department. There a packing order is made according to instructions from the customer: boxes, bags, individual-paired packages, labels, etc.

3. The order goes to production control.

The first step in production control is to tabulate orders by styles, sizes, and colors and to enter them in the "Progress Record" book.

A small book of tickets (2x4¼) with its own serial number is made for each order for production. The front of a book (illustration) shows style, size, knit color, dozens, date issued, dye color, and date dyed. This book has 11 tickets, each bearing the serial number of the book. A ticket is pulled off in each department in turn (knitting, looping or seaming, and so on down the line) as the order of socks advances through the mill.

ALL IN ONE BOOK

The knitting ticket (No. 1) is in two sections. It contains the knitters' names, the date, style, size, and dozens. This ticket is used to compute knitters' wages.

Other identical tickets of the book are: No. 2, looping or seaming; No. 3, clipping and turning only; No. 4, preboarding; No. 5, dyeing; No. 6, boarding; No. 7, top clipping; No. 8, pairing or inserting; and Nos. 9 and 10, extra tickets.

The final ticket is the "Inspector's Report." It provides space for the inspector's name, date, style, size, and pick-outs. There's space for him to state dozens of first, seconds, thirds, holes, looper holes, redyes, reboards, and total dozens.

Like the knitters' ticket, the other tickets in the book are used to compute pay for all production employees except dyehouse operators.

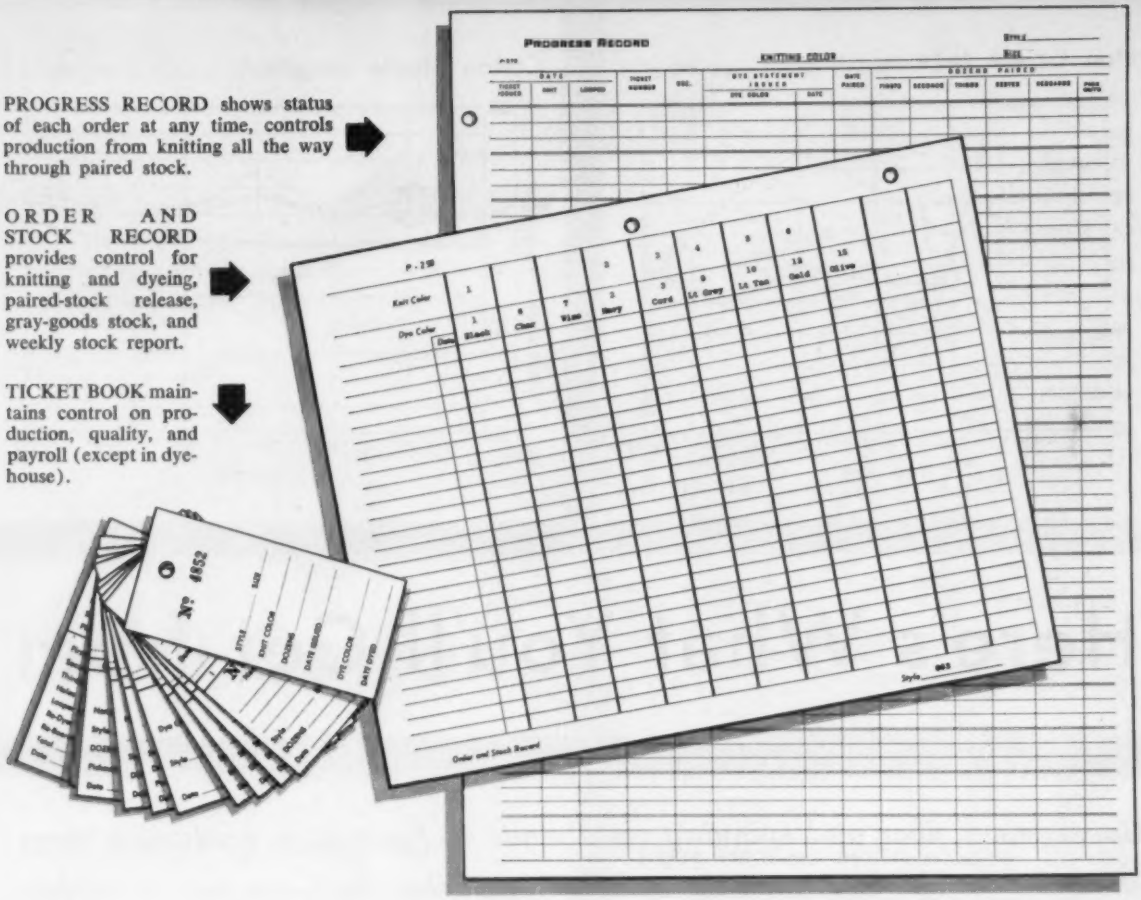
The number of each small book of tickets is entered in the "Progress Record" book. Each day's knitting, looping, seaming, and dyeing are reported and recorded. Right now 68 styles of socks in many, many colors are in production.

A second book, "Knitting Control," is made from a first recap of

PROGRESS RECORD shows status of each order at any time, controls production from knitting all the way through paired stock.

ORDER AND STOCK RECORD provides control for knitting and dyeing, paired-stock release, gray-goods stock, and weekly stock report.

TICKET BOOK maintains control on production, quality, and payroll (except in dyehouse).



orders by sizes, colors, and styles.

A second recap of orders makes up a third book, "Dye Control." From this record, dyeing orders are given by color, sizes, orders, and particular needs of the moment.

UPDATED TWICE A DAY

A fourth book, "Paired Stock Release," contains a record of paired stock held in storage but ready to go to the finishing (packaging) department. This book is made up of reports made at noon and 3:30 p.m. each day. The shipping department uses numbers from this book to release orders from paired-stock storage, but depends on original order for sizes and colors.

After a shipment of goods has been made, the original order comes again to production control, where it is reported as a "shipped order." Then this shipment is taken immediately from the tabulation of orders to show how much paired goods is on hand all of the time.

All books are coded with colored ink. In the "Paired Stock Release" all orders released are written in black ink. Orders to be released are written in green ink. Since this book is revamped each week, the coded ink makes it easy to add or subtract.

A girl in the finishing department keeps a continuous record of throw-outs and reworks. Throw-outs are recorded in green and reworks in black, so correction is easy. If an order is cancelled by a customer, the stock is also added to this book to show the goods are on hand.

PROGRESS EVERY DAY

Book No. 5, "Gray-Goods Stock," shows the total gray goods in stock (less 8% allowance for throw-outs). This gray-goods inventory is taken from the "Progress Record." And once each week, the status of each order is posted. But the book shows each day how close each order is to being finished.

The sixth and final book, "Weekly Stock Report," shows shipments made by style. This report gives three important results: orders not released, orders released but not shipped, and orders in the office.

Orders on hand are subtracted from the total stock. If stock is less than orders, the number is circled so Superintendent Morehead can prod production.

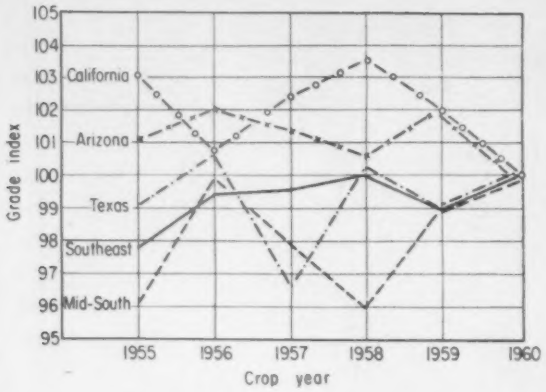
This "Weekly Stock Report" goes production data:

- Last week's production.
- Number of machines per style.
- Number of dozen socks a knitting machine can produce on a given style, and the number of dozens the machines actually have produced. Production is based on three 8-hr. shifts each day, five days a week.

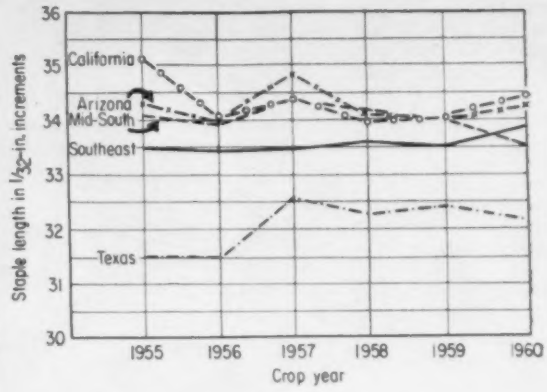
This "Weekly Stock Report" goes to the front office and shows (in dozen pairs of paired stock) the totals in storage racks and orders released but not shipped.

H&C's reports are so standardized that five of its over-all six reports are made on the same 8½x11-in. forms. The first report, "Progress Record," is 11x14.

Cotton Grade Indexes



Cotton Staple Lengths



Here's What You'll Get from

Government fiber and spinning tests made in key cotton-producing areas show that grades averaged the same all over, that early-season cotton had good properties, and that late-season cotton was a big disappointment.

WHAT PROMISED to be one of the best spinning-quality cotton crops on record at the beginning of the season turned out to be something of a dud before the season was over. The only area where late pickings were fairly good was in the Southeast—and only 15% of the U. S. crop is produced there. Most of the early-season cotton, however, had good spinning qualities although weather was poor.

The Mid-South area was plagued with intermittent rain during most of the harvesting season. Texas, especially in the North Central and High Plains areas, was hard hit by inclement fall weather. Even the lower end of the San Joaquin Valley of California had excessive rainfall that cost growers millions of dollars in grade losses.

Early-season cotton generally was well handled at gins, and very little cotton was overdried. In fact, some was underdried despite a 50% increase in the use of moisture meters. These meters are designed to aid the ginner in keeping moisture content at 5 to 7%.

When the late-season cotton—grassy, wasty, and spotty—arrived at the gins it was evident that many ginners (except in the Far West) tended to overgin in order to improve grades. Result was a deterioration in fiber quality. Progressively higher proportions of mechanically picked cotton further intensified the ginning problem.

By F. L. GERDES, Cotton Technologist U.S. Department of Agriculture, Retired Leland, Miss.

SIZING IT UP

But taking everything into consideration, a large part of the crop was of reasonably good quality and acceptable to spinners. Here's what you can expect from 1960 cotton:

Grade—Cotton grade indexes showed an unusual pattern in 1960. Average for all areas was an even 100. In previous years the high ranged from 103.5 in California to a low of 96 in the Mid-South.

Only the Southeastern area has shown a general upward trend since 1955—and there was a slight dip here in 1959. This improvement is probably due to improved ginning methods and slow adoption of mechanical harvesting machinery.

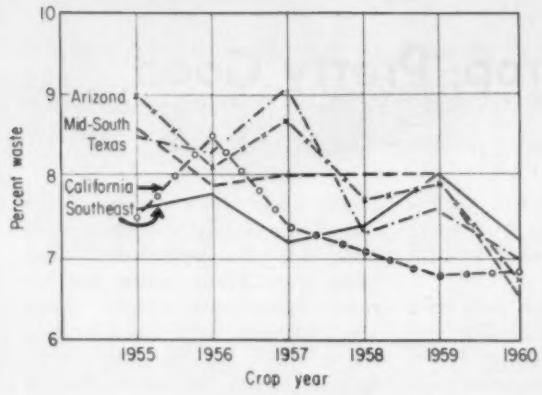
Although grades in the Mid-South have been up and down during the six-year period, early-season cotton has averaged SLM + to M. Increased mechanical harvesting and bad weather have held down grades in much of this area.

Texas grades held up fairly well during the six-year period in spite of increasingly rougher harvesting practices. There was a small improvement in 1960. In several major producing areas of Texas, excessive rainfall adversely affected grades.

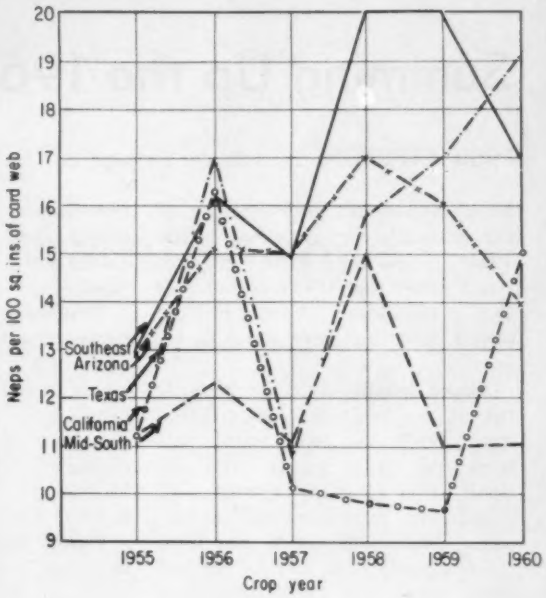
Early-season grades in Arizona and California have averaged from

1960 Cotton

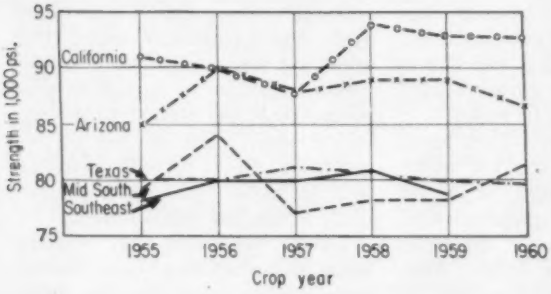
Picker and Card Waste



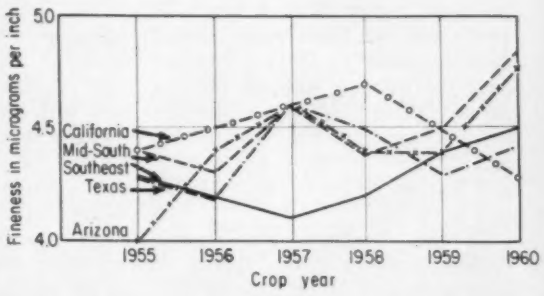
Neps in Card Web



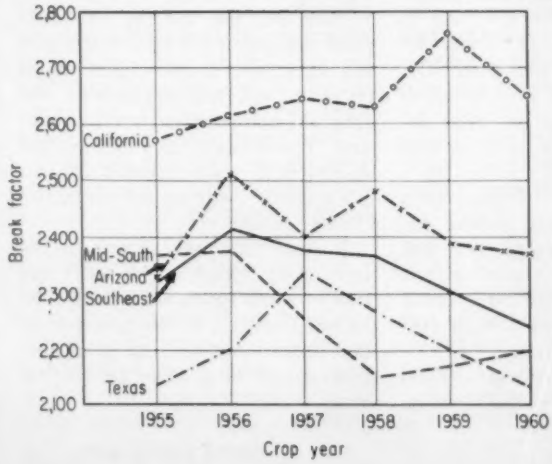
Fiber Strength by Pressley Test



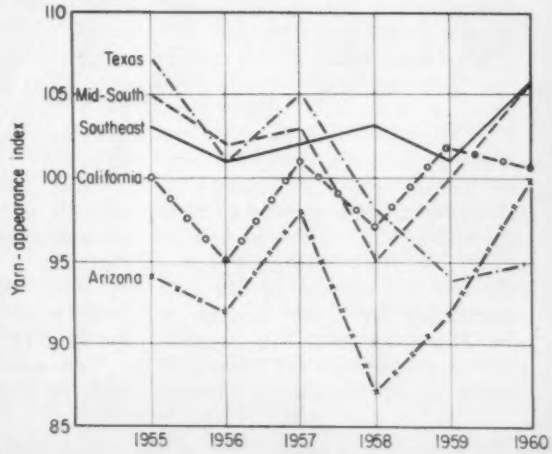
Fiber Fineness by Micronaire



Yarn Break Factors



Yarn-Appearance Indexes



Summing Up the 1960 Crop: Pretty Good

1960 COTTON . . . *Begins on page* 66

M to SM since 1955 because of the generally dry weather. The 1960 crop was about one-half grade lower than 1959 cotton. In fact, grade index (100) reached the lowest point for these states in six years.

Staple length—For the six-year period, Southeast and Texas cotton have shown the most stable patterns for staple length, with the trend being generally upward. In other areas, there is no definite pattern. Mid-South cotton has been especially irregular, and for the last three years the trend has been downward because of unseasonable harvesting weather. California and Arizona cottons have averaged about $1\frac{1}{16}$ inches in modal length in recent years, with a slight improvement in 1960.

Fiber strength—The only area to show higher fiber strength in 1960 was the Mid-South. Here, there was about a 5,000 psi. increase over the average strength for the previous three years. But no definite trend is apparent for the six-year period. In fact, there was a drop of 7,000 psi. in 1957—from 84,000 to 77,000 psi.

In the Southeast and Texas, Pressley strength values appear to have stabilized at or near 80,000 psi. California and Arizona, as usual, showed the highest strength in 1960. In recent years, tensile strength of California cotton has ranged from 93,000 to 94,000 psi. Corresponding test lots in Arizona showed 87,000 to 89,000 psi.

Micronaire values—Fiber coarseness increased in all areas in 1960 except in California. Here, average Micronaire values were the lowest (4.3) in six years—the lowest for any area. Pronounced increases in coarseness were noted in the Mid-South (4.8) and in Arizona (4.7). Weather conditions during the boll-development period were responsible for higher readings in the Mid-South area. In Arizona, increased plantings of Deltapine cotton raised the average Micronaire values. Deltapine lots, for example, averaged 5.0 Micronaire value as compared with 4.5 for Acala-44.

Neppiness—Card-web neps have remained relatively stable for several years in all areas except Texas, which has shown a progressive increase since 1957 due to increased plantings of longer-staple cotton. California, with a nep count of 10 for the previous three years, jumped to 15 in 1960.

Picker and card waste—Manufacturing waste was lower than usual in all areas during 1960. Averages generally were equivalent to those associated with SM cotton. The most consistent downtrend (since 1956) was in California. For the last three years, Texas and Arizona have had lower waste losses than during the preceding three years. A definite improvement was apparent in the Southeast and Mid-South in 1960. Here, the figures were equivalent to grades associated with SM cotton or better.

Yarn break factors—Yarn break factors for most of the five major cotton-producing areas were off slightly in 1960 as compared with 1959. In the Southeast, the trend has been down since 1956. Mid-South cotton improved a little in 1960 over 1959, but strength has been gradually going down since 1956.

Texas cotton showed a substantial increase in yarn break factor from 1955 through 1957, but a switch took place in 1957 and the trend has been down ever since. The same thing happened in Arizona in 1956. Yarn strength has been deteriorating for several years in that area.

From 1955 to 1959, yarn strength of California cotton increased steadily except for one slight dip in 1958. It is off a little in 1960, but the average break factor is still the equivalent of cotton stapling $1\frac{1}{8}$ inches.

Yarn-appearance indexes — Except for Texas and Arizona, none of the other major regions of the cotton belt showed any unexpected trends in yarn appearance. Yarn made from Texas cotton has become increasingly rougher since 1957, although there was a leveling off in 1960. On the other hand, Arizona cotton has shown decided improvement since 1958 because of increased acreage planted with Deltapine.

Other areas showing improvement in recent years include the Mid-South and Southeast. California remains about the same—probably because of heavy plantings of one variety, Acala 4-42.

LATE PICKINGS—LOWER

Late-harvested cotton in 1959 and 1960 showed definite deterioration in quality. As expected, Micronaire values were lower in all areas than for the early crops. This condition was due primarily to decreased maturity as harvesting proceeded from the bottom to the top of the plant. But in spite of this condition, fiber strength held up well throughout the season, especially in the low rainfall areas.

In the Southwest and Western areas, manufacturing waste showed little difference for the two stages of harvest. But manufacturing waste increased in the Southeast and South Central areas as the season advanced. In all areas, late cotton was neppier both in 1959 and 1960.

Yarn strength for the two crop years was lower for late-season cotton than for the early ginnings in all areas, but yarn appearance was generally stable throughout the season. The Western area had a small reduction in yarn strength for the late crop in 1960, as did the South Central region.

Southeastern late cotton had a yarn-strength loss both in 1959 and 1960. Yarn-appearance grades for cotton produced in raingrown areas were erratic during both years, but quite regular in all other growing regions.

Here, on this page, is a first-hand report on the National Plant Maintenance & Engineering Conference's Textile roundtable as compiled by TEXTILE WORLD's Senior Associate Editor, Richard B. Pressley.

Getting More from Maintenance

WORRIED because your mill maintenance costs are rising every year? Then take a close look at what engineers in other companies are doing to improve their companies—to make themselves more valuable—to make their dollars go farther.

Take any part of the discussion that took place at the textile roundtable at the recent 12th Anual National Plant Maintenance & Engineering Conference in Chicago. See how it fits the problems in your mill. The men in Chicago talked about men, training, and maintenance of production machines, air conditioning, and instruments. About relamping—and how to get more light at the same or lower cost. And—always—about how to get more for their money.

Harry Barbrey, group engineer, Woodside Mills, Greenville, S. C., an active engineer in seven mills, was moderator of the textile-mill session. Mill engineers from Pawtucket, R. I., to as far west as Appleton, Wis., filled in with their ideas.

PERSONNEL MODERNIZED

Facts brought out in the meeting show that continuing improvement of textile-machines and equipment has placed increasing importance on engineering. As the industry has continued to modernize its equipment and facilities, so it must update its maintenance personnel.

Equipment and machinery have become more complex, more delicate, and in general, more technical to service and maintain.

Plant engineers are broadening the perspective of their jobs by extending preventive-maintenance programs to production machines to control operating costs. Because modern machines are operating at higher speeds, operating conditions have to be controlled more closely to improve quality and increase production. And every plant is faced with improving working conditions simultaneously. One mill is taking its first step by grinding card clothing and setting cards.

A second mill has two machine-maintenance departments in every production department: (1) productive maintenance under the department head and (2) nonproductive maintenance under plant engineer.

UPGRADING SKILLS

To meet the demand for better production and maintenance employees, management has to set up training programs. The result is workers with higher skill and better technical knowledge. At Woodside Mills, for example, there's an instrument mechanic in each plant. In skill and training, he holds equal rank with the mill air-conditioning technician.

A second mill has one man who checks electronic and electrotechnical controls at the beginning of each shift. As this mill is small, the instrument job is not full-time work and the mechanic fills in on other jobs. Routine instrument repairs are made on the spot. But instruments requiring major repairs are sent back to the manufacturer. For training, instrument-men-to-be are first sent to the instrument manufacturer's school. Then by footing the bills, the mill encourages further study in schools.

AIR CONDITIONING—BIG

Air conditioning and refrigeration are important in today's textile plant, and a skilled technician is required to operate them.

A definite maintenance schedule with periodic inspection and cleaning is required to avoid common failures. At one mill, dry ducts, for example, are cleaned each week. Then employees clean fans the following week. Refrigerated air conditioning is common in one group of mills in which there are 36 central stations. This company first tried to filter the air, but it was too expensive. Now it uses drum-type filters to filter the water effectively. During the peak summer months, tubes of coolers have to be cleaned only every three months. At this mill, the older cooling towers made of untreated redwood are being replaced with new treated towers.

NEEDED: MORE LIGHT

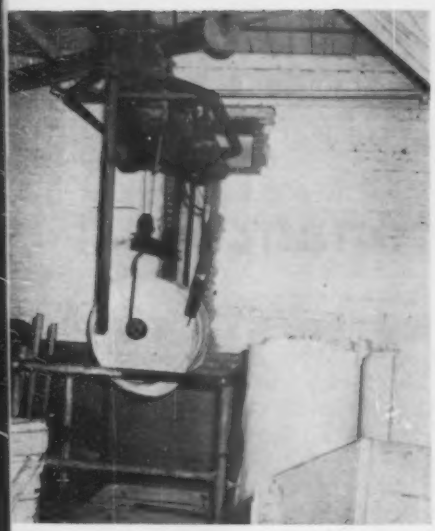
Lighting, according to the men in Chicago, is a major item in the efficiency of any mill. A poorly lighted area or an improper arrangement of lighting fixtures is detrimental in at least two ways:

1. Inferior goods are produced because the machine operator does not have enough light to detect bad work.

2. Parts that require lubrication are often not noticed until a breakdown occurs.

In departments with adequate lighting fixtures, one mill engineer says: "Lighting efficiency can be increased 25 to 35% at the same power with a relamping and correct maintenance."

No engineer reporting at Chicago is satisfied with his standards of lighting. One mill successfully relighted a small mill addition to comply with the 1959 lighting standards of Illuminating Engineering Society (IES) (TEXTILE WORLD, March, 1959, p. 51, and Mid-July, 1960, p. 190). The engineer plans to go to group lamp replacement as soon as he has brought other areas up to IES standards.



MECHANIZED HOIST and carriage takes rolls to scouring machine.

QUICK CLASSIFYING: Case number is slapped on at strapping operation.

FAST HANDLING by gravity conveyor guides finished goods into truck.

Fast warehousing (above) plus bulk storage (right) Add up to . . .

Handling That Cuts Cost 50%

PIPELINES and conveyors like those in the photoes above have all but eliminated pails and hand trucks at this cotton bleachery. Fact is, handling costs have been cut in half because of the swing to bulk handling and mechanized warehousing.

This is Kerr Bleaching & Finishing Works in Concord, N. C. Today, management is counting big gains from updating its handling operation. Tomorrow, management plans to take the ultimate step —formulating plain finishes by means of proportioning pumps.

Hooked into tank-car lots of soluble oils, corn syrup, and polyvinyl acetate, for example, the pumps will feed exact proportions of such ingredients into water lines. From there, the mixtures will go right to the finishing pads. For a bleachery the size of Kerr—1½-million yards a week—the potential for cost-reduction is large.

CUTTING COSTS ALL OVER

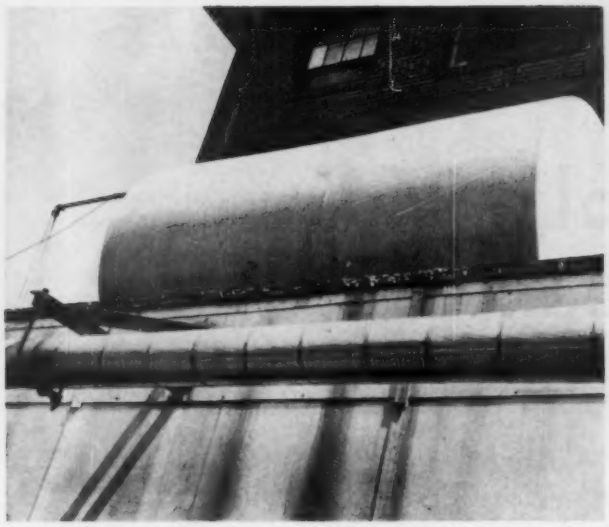
Labor costs for mixing finishes and dyes are down more than 50%. But that isn't the only cost-cutting that's going on at Kerr. Because bulk-handling is the rule today, there's little waste of costly chemicals. Meters on the line assure accurate formulation of finishes. Using these meters, Kerr has done away with human error, overruns, and short measures.

Bulk-handling has paid off in other ways, too. For instance, there's no more need for storage space for small-lot chemicals. And there's no longer the cost of hauling away empty containers, or of having working capital tied up in containers on which deposits are charged.

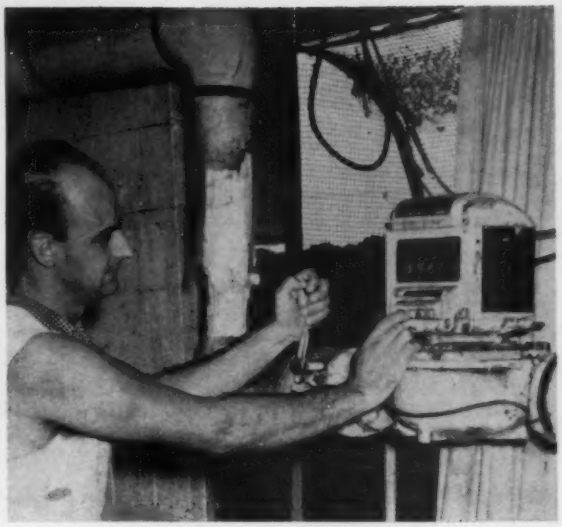
Then, too, space that used to be tied up by lots of bulky drums and barrels has been freed for more profitable uses.

There's still a certain amount of material that must be handled in drums. Hydrosulfite is a good example. But today one man with a forklift truck makes about 11 round trips between package-storage and the areas to be served. Once his entire day was occupied with 20 to 25 trips for the same purpose. The time he saves he can now spend in other general-purpose operations that used to require extra—and expensive—help.

Before Kerr decided to handle basic chemicals in bulk, it took 20 to 25 people to service the plant. It took that many people to unload freight cars and to truck bags, drums, carboys, and barrels to storage areas. They also toted these materials to service areas and moved empties out to the back lot. Today, only about 10% as much labor accomplishes the same jobs because of bulk handling.



BULK STORAGE tanks like this one that holds thermosetting resin, feed chemicals to finishing ranges with great cost savings.



BULK HANDLING is controlled by this Neptune meter that can be set to deliver any quantity of chemicals in solution.

HANDLING—MECHANIZED

At the other end of the finishing process comes the business of handling cases of finished goods.

Kerr's cost-cutting approach to this problem has involved an outlay of more than $350,000 and it includes a new 405x120-ft. warehouse, a conveyor system within the warehouse, and conveyor systems at the plant that deliver directly to a specially designed trailer truck. This trailer truck operates only between the plant and the warehouse—a distance over the road of about 2½ miles.

The warehouse will hold 10- to 15-million yards of goods on seven miles of heavy steel racks. Cases can be stacked seven high.

The conveyor system, which is set up to receive, transport, and deliver cartons, is 722 feet long and is adapted on the receiving side to pick up cartons directly from the delivering trailer.

No manual handling of cases is involved from strapping machine tp final shipping.

The trailer has three decks that carry the loaded cartons. A special ramp at the finishing plant tilts the trailer so that cases coming off the conveyor from the packing room move by gravity toward the front end of the deck. The adjustable section of the packing-room conveyor is set by motor drive to serve each of the three decks in the trailer. At the warehouse end, the receiving ramp is tilted so that the cases roll out onto a powered conveyor that takes them into the warehouse. The receiving conveyor is also adjustable to level off at each of the three decks of the trailer. Gates on the end of each deck hold cartons in place until they are to be unloaded.

As the cartons come into the warehouse, they are indexed or spaced so that fork trucks can easily remove them from the main warehouse conveyor for storage. They move directly to the shipping deck if they are under shipping orders.

The loading and unloading of the trailer is done in about 10 minutes for each operation.

The trailer holds 50 to 80 cases, according to size. Pushbuttons do most of the work; so the truck driver has only to use them to actuate the delivery and receiving ends of the conveyors. No other labor is needed.

Once inside the warehouse, cartons travel on a 720-ft. conveyor placed so that goods can be quickly removed from the conveyor to be placed in bin storage or taken from bins and placed on the conveyor for delivery to the area where they will be loaded onto trucks for shipment.

MOVING CARTONS

As in all modern bin-storage systems, each carton has its own number that aids classification. The unloading operator places each carton into the right bin area by following the number. Number is stamped on at strapping machine.

The whole operation is run by just five men. Compare this to the earlier set-up—five old-style warehouses scattered around Concord, an excess of trucking, loading, and unloading by manual labor, and serious time losses—and you can see why Kerr expects its new system to pay for itself in short order.

A closed-circuit television system provides further mechanization of order handling. The system operates between mill office and warehouse. As orders come in they go by Teleype to the shipping department. Today, goods move into storage or out to the customers with less time and labor involved than had been thought possible just a short while back.

Quality Control 1961: The Experts Speak Out

Random balance. Control-chart dynamics. Uncontrollable processes. Those are just a few of the 26 papers and panel discussions presented in Winston-Salem at the Textile Division of the American Society for Quality Control meeting. Here are highlights of that important meeting.

Statistical Quality Control

Work sampling is becoming more important every day in textile operations. Here are three approaches that may help you analyze samplings for defects through the use of applied figures:

DETECTING VARIABLES

Random balance is a random sample taken from a complete factorial experiment dealing with all the known variables affecting a process. The purpose of a random-balance experiment is to screen the variables that are responsible in the most part for the variation.

You should select variable factors at two or more levels to make sure that you can spot influences in the process traceable to these variables in the product.

From these variables and levels, draw up a scatter-plot graph. Top points of one sample plus the bottom points of another sample should add up to at least 7 for experiments with 24 runs.

The critical number, however, adds up to 11 when you are analyzing several scatter plots.

Once you have identified your variables, you must use other statistical tools to estimate the effects that each one has in the process. The final step is to take action in the direction indicated by the results of the experiment.—*From a paper by H. A. Prado, Owens-Corning Fiberglas Corp.*

CONTROLLING PROCESSES

The Shewhart control chart as used in process control has two major uses:

- Initially, it aids in the establishment of a state of control for the process by helping detect assignable causes of variation.
- When a state of control is reached, you can use the chart to detect any other assignable causes that change the mean or variance of the process. You can use it to keep the process in control.

Normally, two charts are used. One controls the variance of the process. The other controls the mean. Samples of four to six adjacent items (a rational subgroup) are taken from the process periodically, and the mean and variance of this sample are plotted on the charts. Sample points that fall outside of the control limits on either chart are taken as an indication that an assignable cause has affected the process. That's the time to search out and eliminate this cause.

The term "assignable cause" refers only to those factors that change the process quality and over which the operator has no control. Sometimes, it's possible to set up a feed-back loop and study the process by the use of Markov chains.—*From a paper by H. C. Sweeny, Research Triangle Institute.*

BOOSTING SLIVER QUALITY

A sequence of 150 observations taken from the production of card sliver in terms of grain-weight for alternate yards shows that the process is not in statistical control because of a very pronounced form of cyclical behavior. Without looking at an actual control chart, it's obvious that an assignable cause is present. Also, it's clear that short-term (inch-to-inch) variation in the picker lap is stretched into long-term variation in the sliver.

Unless the variation in the picker lap can be entirely eliminated, you have to live with these cyclical patterns. Experts can point to numerous methods of reducing this variation. Beyond a certain point in the reduction, however, the additions to the cost of manufacture become prohibitive.

In this instance, you are left with an assignable cause of variation that is to remain. The problem is to

eliminate or prevent other assignable causes of variation in the sliver.

About the only thing you can do in a case like this is to specify how the original data are to be selected and broken into subgroups and then specify which statistics are to be computed and how control limits are to be determined.

Consecutive subgroups do not give satisfactory control. Random subgroups give a better picture, but leave a lot to be desired. While the following solution is not ideal, it is a compromise approach to solving the problem:

Plot the weight of one yard of sliver taken from each of four cards at the same time. Repeat this operation four times and plot the median of each four samples. Thus, every 15 minutes you have a median of samples from each of the four machines and every hour a sample of four from each machine independently. Control limit for ranges is based on two standard deviations.

This technique gives ranges within and across machines. If the four machines are reasonably on target and similar in variation, the across-machine average range can provide an additional means of estimating allowable control limits. If the within- and across-machine ranges differ, you probably have an assignable cause for the sliver variation.—*From a paper by Thomas A. Budne, Statistical Engineering Consultant.*

Processing Quality Control

The application of quality-control methods to processing problems can save you many dollars if your supervisors understand what benefits you can gain. Here are some test procedures that interested many quality-control experts.

HOW QUALITY AUDIT WORKS

The Quality Audit Program developed by the Department of Textile Technology of the School of Textiles at North Carolina State College is designed to:

- *Determine the over-all quality level* of the entire operation of a spinning mill.
- *Locate processes not functioning properly.*

You can reach both goals by sampling and testing each operation from picking through spinning.

The sampling plan is based on the number of spindles in the mill and is specifically designed to show the level of quality performance at each operation.

Five tests are performed at each operation:

1. Pickers—Laps are tested for percent unevenness, total weight, ounces per yard, and total yards.

2. Cards—Sliver is tested for grains per yard, percent variation in weight within and between cards, and percent unevenness as measured by the Uster evenness tester, Integrator, and Spectrograph. Special arrangements can be made to make nep counts.

3. Combers—Combed sliver is tested for grains per yard, percent variation within and between combers, and percent unevenness as measured by the same instruments used in the carding tests.

4. Breaker drawing—This process is tested only for carded-yarn mills. Sliver is tested in the same manner as other slivers.

5. Finisher drawing—Sliver is tested for both combed and carded mills in the same manner as other slivers.

6. Roving—Bobbins from both front and back lines of the roving frames are tested for evenness, average weight, and variation in weight. Spectrograms and %U measurements are made on bobbins.

7. Yarn—Test yarns are subgrouped by numbers and frames. They are checked for number, strength, variation in number and strength within and between the bobbins.

Yarn grade and unevenness are determined, and Spectrograph analyses are made for all samples.

The program is designed to audit the quality of manufacturing in very much the same way as a financial audit serves the company. Of the participating mills, some are using the results as an audit of their own operations.

Others are using the findings as an unbiased measurement of performance and to isolate areas in the plant that need direct attention.—*D. S. Hamby, Professor of Textile Technology, North Carolina State College.*

GAGING FIBER EFFECTS

The blending of cottons with dissimilar fiber properties was investigated to determine its effect upon processing performance, spinning performance, and yarn quality in medium (22s) and fine (50s) yarns. In these trials, we evaluated the effect of grade and cavitomic damage (SM and SLM, Sp), fiber fineness (3.4 and 5.5 μg. per inch), staple length (⅞ in. and $1\frac{1}{16}$ inch) and fiber strength (70,000 psi. and 95,000 psi).

We used cotton bales differing appreciably in the property being investigated but having other similar pertinent properties. For each trial, we ran the 100% components of the property being investigated and three blends of these two cottons. Then we made replicate trials to find reliable trends.

Conclusions:

- You can run blends containing one or two lower grades than normally used without appreciable lowering of spinning performance and yarn quality if other fiber properties are normal.
- Cotton damaged by cavitoma

can have a very detrimental effect upon quality if you blend over 25% cavitomic-damaged cotton.

- You can improve spinning performance and yarn strength appreciably by using mixes with an average fineness of 3.5 to 4.0 μg. per inch without appreciable lowering of yarn appearance.
- Yarn strength can be appreciably increased by the addition of a low percentage of stronger cotton. But spinning performance will not be appreciably improved.
- The blending of shorter staple and cotton containing a high percentage of short fibers appears to have the greatest detrimental effect upon spinning performance and yarn quality of those investigated.
- You can get a particular cotton-yarn characteristic by the predetermined blending of dissimilar cottons if you know the average fiber properties of each bale.—*William T. Waters, Associate Professor of Textile Technology, Auburn University.*

TESTING RAYON

Rayon staple is sold on the 11% moisture regain basis. Until early 1959, we determined moisture by drying 100-gram samples of staple to constant weight in Emerson ovens. The difficulty of characterizing a staple unit producing more than 1,000 pounds per hour by means of 100-gram samples and the necessity for waiting as much as 90 minutes after sampling for the result caused us to look for a secondary method of moisture measurement. We adopted the Forte electronic moisture analyzer after thorough testing and correlation.

We compared the variability of the Emerson and Brabender ovens and the electronic analyzer. Each moisture sample was made up of about 10 subsamples to try to get a sample representative of the staple being produced. We used six containers: two large ones for the analyzer samples, two smaller ones for the Emerson oven samples, and two small ones for the Brabender oven samples. We took subsamples for each of the containers.

We repeated this procedure 10 times to collect 6 samples as nearly alike as possible. Pairs of samples for each of the three methods were collected and measured 54 times. Then we found the standard deviation of the method, as measured by the variability between pairs, along with the average moisture. These data indicate significantly better repeatability for the electronic analyzer. One strong influence on this precision is the sample size. The Brabender uses 10 grams, the Emerson 100 grams, and the analyzer 568 grams (or 20 ounces).

In summary, the secondary method for measuring moisture in rayon staple is fast and precise as compared to the primary method.

However, it must be constantly monitored to make sure that the calibration continues to be exact.—*From a paper by R. L. Overcash, American Viscose Corp.*

Practical Applications of Quality Control

Several papers and discussion panels covered yarn manufacture and fabric evaluation. Briefly, they were:

Variation flow analysis—Professor Norbert L. Enrick (University of Virginia) discussed recent developments in his technique of "Variations Flow Analysis," as applied to reduction of variations in yarn size, strength, and ends down. The method was shown in simplified form so as to be usable by the practical mill man. This paper won the "Best Paper for 1961 Award".

Fabric-rating plans—Sydney M. Cone, Jr., (Vice-President, Cone Mills Corp.) suggested that the best way to set up a fabric-rating plan is to cover the following points: (1) know your market, (2) know your fabric, (3) know your finish, and (4) know your garment detail. He feels that "demerit"-rating plans are negative and that the term should be dropped.

Organizing for quality control—R. D. Robinson (QC Engineer, Pittsburgh Plate Glass Co.) gave details and organization charts on how his company set up a quality-control system for the manufacture of glass fiber. He explained specific duties of key people at major processes.

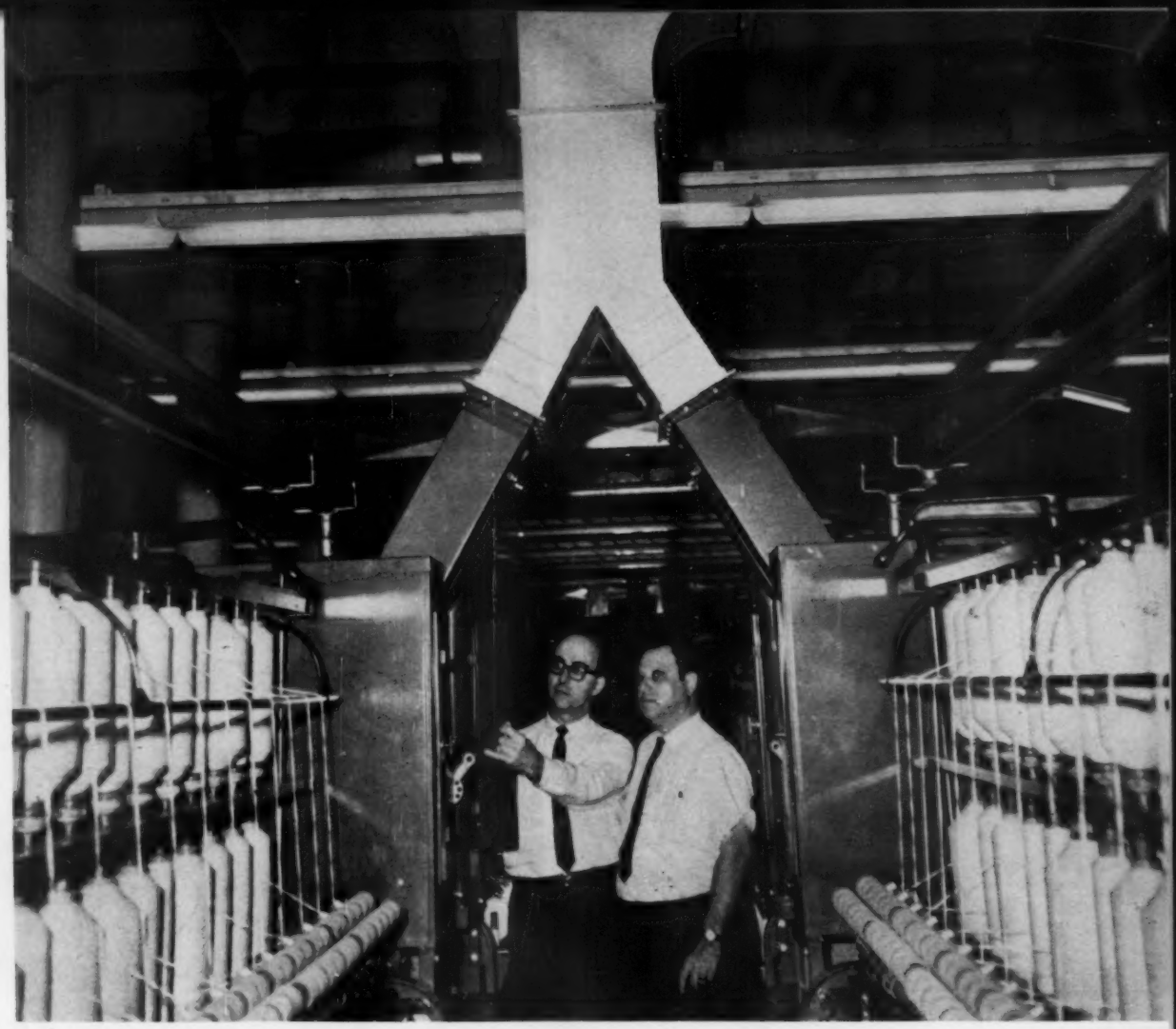
Evaluation of color quality—J. J. Hanlon (Mohasco Industries, Inc.) reported that color is one of the most controversial aspects of the textile industry. The chemist employs it as a generic term for dyes and pigments, the physicist looks on it in terms of optics, physiologists and psychologists consider it as a sensation in the consciousness of human observers. Mr. Hanlon showed dozens of slides showing how color can be scientifically evaluated and measured in the field of textiles.

Moisture determination — John M. Gould (Chief Chemist, Barre Wool Combing Co. Ltd.) described latest techniques for determining the water content of textile fibers—especially wool. Stanley Breen (General Manager, Forte Engineering Co.) told how his company's Model K electronic moisture-content analyzer can measure and control the moisture content of cashmere ($5 to $12 per pound) within a standard deviation of 0.25%.

Customer complaints — E. H. Stier (James Lees & Sons) said that customer complaints offer (1) an effective scoreboard for your manufacturing quality-control program and (2) a library of facts that can be used in the design of new products. Quality control at his company breaks down into three distinct areas. They are:

1. engineered fabrics,
2. manufacturing controls, and
3. quality control in selling.

Mr. Stier exhibited a number of forms and check sheets used by James Lees & Sons that "unravel the riddle of complaints, and point the way to future profits."



PNEUMAFIL DUCTS are inspected by Superintendent Cox and Spinning Overseer Durham. Here air goes into central-station ducts. Return air from the Pneumafil mixes with return air from the spinning room.

New Air Conditioning Improves Quality, Efficiency

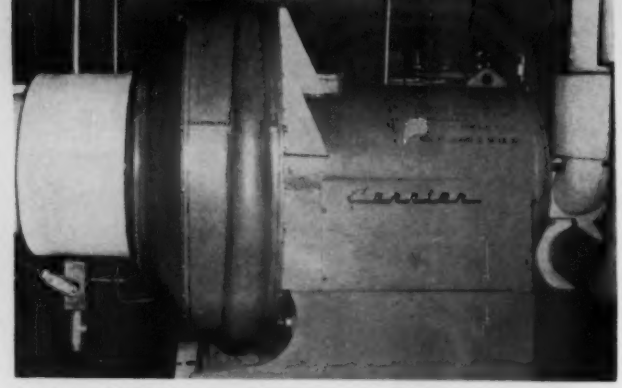
By installing six new cooling and humidifying units at strategic points in its carding and spinning departments, this plant has reduced ends down and stepped up yarn quality. Here's how.

ONE OF the newest refrigerated air-conditioning installations in the textile industry is at Mayfair Mills, Arcadia, S. C. (photo). Purpose of the equipment is twofold. It's designed to:

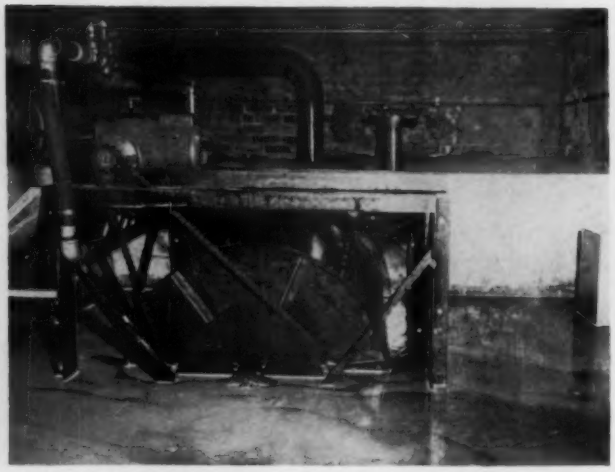
- Improve quality of yarn going into fine print cloth.
- Improve working conditions for employees.

Both goals have been reached. Ends down are fewer at spinning and roving. Yarn evenness and strength are improved. Operator morale has soared, and there's less absenteeism during the hot summer months because of improved working conditions. In addition, the air

CONTROL CONSOLE is brain of the air-conditioning system. Here J. C. Bogan, master mechanic, checks settings.



500-HP. MOTOR, hermetically enclosed, drives compressor (left) at 3,550 rpm. A gas-cooled common shaft is used.



ROTATING FILTER cleans lint and foreign matter from water, which washes the air entering manufacturing area.

NEW AIR CONDITIONING . . . *Begins on page* 75

is practically free of fly, and cleaning is much easier.

Summer temperature averages 82 F. at 50% r.h. in the spinning department. Winter conditions are slightly different as work runs best then when the temperature is 84 F. at 48% r.h. In the carding department, temperature is held at 82 F. year around. Humidity is 58% around the cards and 55 to 56% at roving and drawing.

This close control is made possible by the use of individual stainless-steel Carrier Rotaspray units suspended from the ceiling directly over manufacturing areas. There are four of these units in the spinning room and two in the card room that provide high saturation efficiency at desired temperatures.

HOW ROTASPRAYS WORK

Each Rotaspray unit is essentially a factory-assembled central-station apparatus consisting of outside- and return-air dampers, an air-mixing or plenum chamber, an axial-flow direct-connected fan, spray chamber, and eliminator section. In addition, there are air ducts, heaters, outlets, and relief dampers.

An interesting feature of this installation is the fact that return air from Pneumafil ducts is fed into the system along with return air from the room. Outside air is mixed with room air and forced by the axial-flow fan through several banks of spray nozzles to produce high-density atomized water.

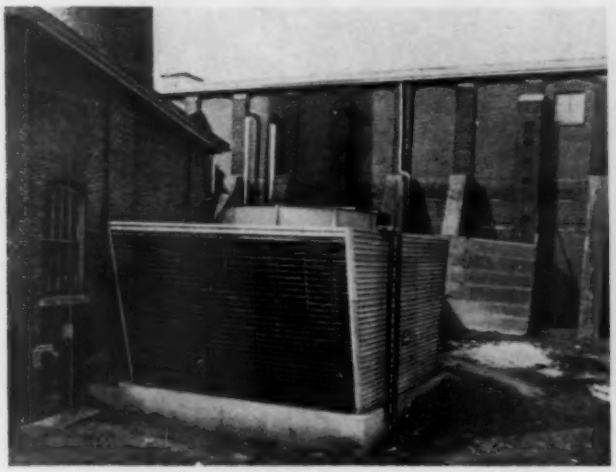
Each unit is supplied with chilled water (48 F.) from the refrigeration machine. Water drains back by gravity to a collecting tank in the refrigeration room where it is filtered, pumped back through the cooler, and returned to the Rotaspray units as needed. All units are supplied by a common chilled-water pump, and flow of water is regulated by an automatic throttling valve. The chilled-water system also has an automatic pressure or by-pass valve that keeps constant pressure on the water.

The filtering system is self-cleaning and automatic. It takes out all lint and foreign matter from the water before the water is returned to the Rotaspray units. The filter removes air from the water and acts as a purge or balance point in the open piping system.

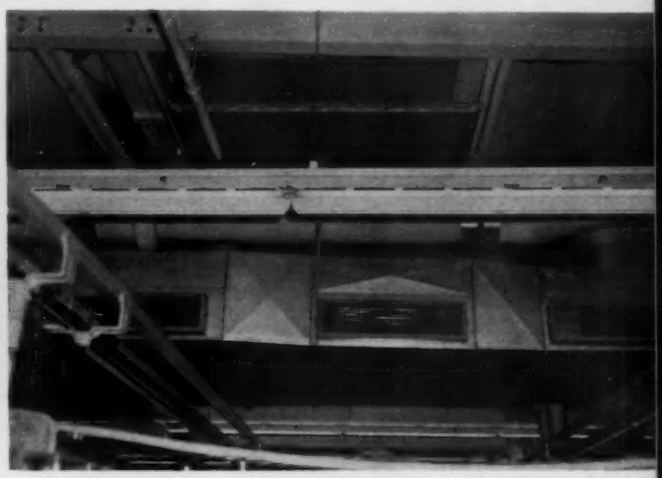
In operation, the rotating motion

COMPACT DESIGN of the major refrigeration units requires little floor space. Filter unit is in square tank at rear.

CHILLED-WATER PUMP supplies Rotaspray units in carding and spinning rooms. Pump is being checked by J. C. Bogan, Jr.



COOLING TOWER takes heat out of water after it leaves the condenser. Bricked-up windows improve efficiency.



ROTASPRAY UNIT in spinning room is over distribution ducts and new 50-candlepower strip lighting.

of the eliminator wheel prevents collection of lint, which is thrown off by centrifugal force. Fan blades stay clean in the same manner. Other interior parts are cleaned by the flushing action of the spray nozzles, which are largely self-cleaning in themselves.

The four units in the spinning room are operated by 45-hp. motors. The two in the card room are smaller and require only 30-hp. motors.

REFRIGERATION SYSTEM

A major item in the air-conditioning system at Mayfair is a 500-ton Carrier refrigeration unit designated as Model 19C6M2-15-15. The model numbers and letters indicate the type and size of the various machine assemblies as follows:

19—Centrifugal refrigeration unit
C—Two-stage hermetic unit
6—500-ton compressor
M—500-hp. motor
2—Impeller combination (2)
15—Cooler (15 inches)
15—Condenser (15 inches)

Here are the functions of the major components:

Cooler—actually a heat exchanger—cools water by passing it through tubes immersed in Freon. Evaporation of liquid Freon into gaseous form lowers water temperature to 48 F.

Compressor — compresses Freon gas and discharges it into condenser chamber.

Condenser — liquifies the Freon gas. Heat from the gas is transferred to water, which is circulated through a cooling tower.

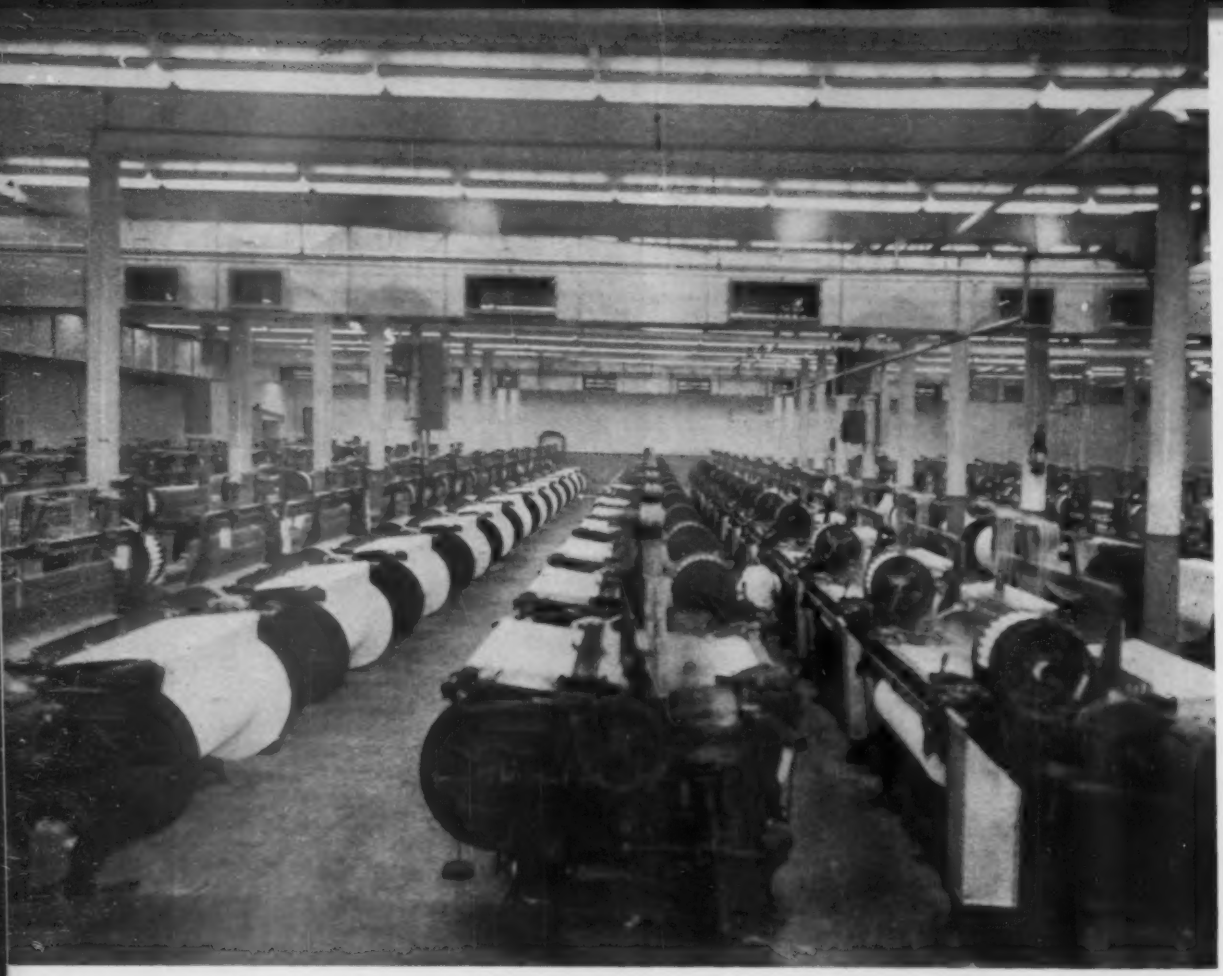
Economizer—partially evaporates liquid Freon before it returns to the cooler. This vapor cools the sealed compressor motor and passes on to the second stage of the compressor.

Purge-recovery unit — purifies Freon gas by continuously extracting it from the top of the condenser and removing air and water. This unit consists of a small condenser and separator.

Drive—for the compressor consists of an hermetically sealed electric motor with impeller and rotor on a common shaft. This shaft is gas cooled.

The gas-cooled motor, a squirrel-cage induction type, is rated at 550 to 600 hp.—3 phase, 60 cycles. It operates at 3,550 rpm. on 4,160 volts. Full load requires 61 amperes, locked rotor 256 amperes.

That, in a nutshell, is how Mayfair's system works.



WEAVING on 96 brand new Draper X-2 looms takes only 3 men—One weaver, one loom fixer, and one battery hand.

A Relocated Weaveroom: Down in the Basement

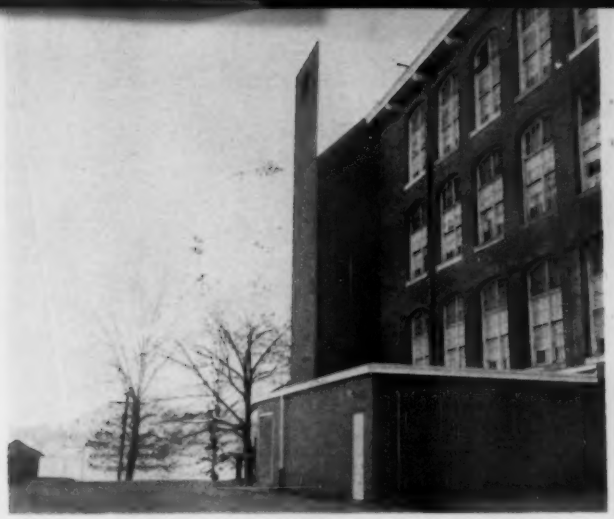
That's where some mills are going to escape vibration problems. Payoff: easier air conditioning, lower construction costs, and better loom footings, mill management says.

THE REASON you see only one man in that photo above is that this whole weaveroom runs with just three full-time employees. One loom-fixer, one weaver, and one batteryhand tend these 96 looms. Lubrication, cloth doffing, and supervision are only part-time jobs.

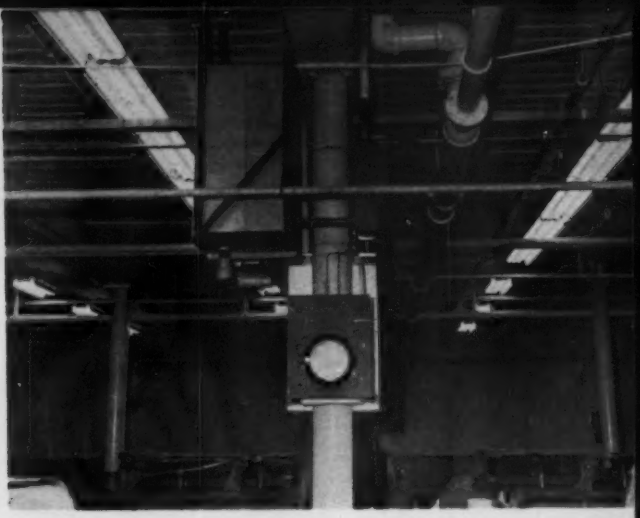
What's even more amazing about this new weaveroom is that it sprang into being in just 4½ months. In June, 1960, Pickens Mill in Pickens, S. C. laid out a fast plan of action to meet customer demand for wider goods. But to do so required an important decision.

New models like these Draper X-2, 50-in. looms run faster than the conventional 40-in., E-model looms Pickens had been using. Because the X-2 beats out cloth at 188 ppm. (compared with 165 ppm. for the E-model), vibration is an important factor.

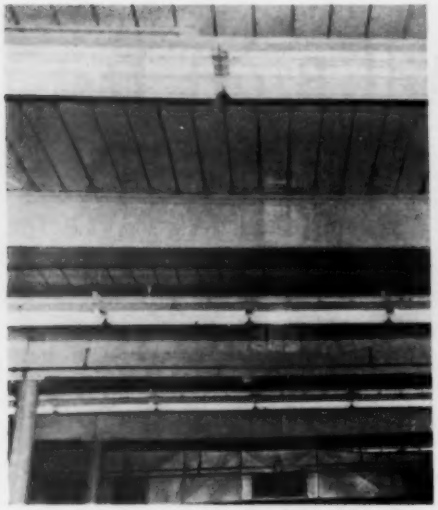
Mill owners Ben F. Hagood and Ben F. Hagood, Jr., didn't want to risk possible building damage by substituting the new looms for the E-model units in the second- and



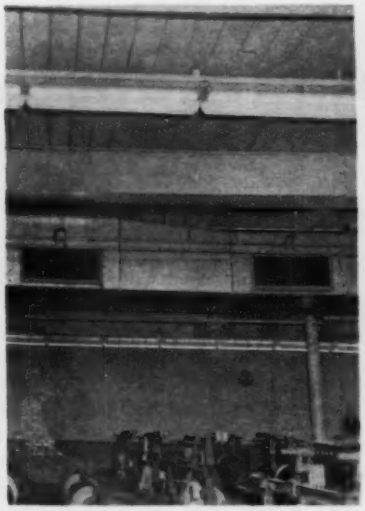
OUTSIDE BUILDING houses air-conditioning equipment. Shaft alongside new building moves goods to basement.



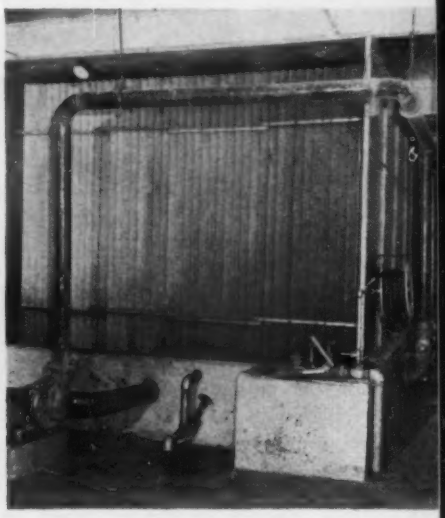
SERVICE EQUIPMENT for new weaveroom, kept well out of the way, includes moisture recorder, panel board feeder.



CONTINUOUS ROWS of 15% upward-component fluorescent lamps provide more than 50 footcandles.



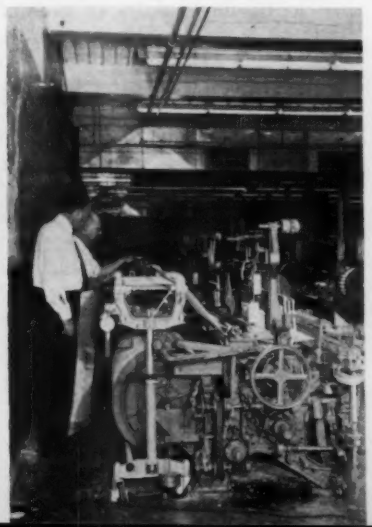
HUMIDITY DUCTS are studded with atomizers at vents to keep conditions just right in the weave room.



COOLING PLANT includes this air-washing equipment, which provides 40,000 cfm. of air to adjacent weaveroom.

NEW LOOMS have aluminum lays, Hunt letoffs, linkage parallels, and No. 14 shuttle checks.

WARP TYING is a portable operation. Superintendent Jerry Underwood (left) watches yarn-preparation.



BEAM-STORAGE area is clean and uncluttered. It used to be the weaveroom. Mill machine shop made racks.

DIGGING—Contractor shored up the floor, then moved in with bulldozer to remove 9 feet of dirt.

POURING—Next step was to pour foundation footings. High-strength concrete supports 8-in. steel columns.

How Pickens Mill Built Its

NEW PLACE TO WEAVE . . . *Begins on page* 78

third-floor weaverooms. Chances were the old building just couldn't stand the excessive vibration.

Solution? Go underground. And that's exactly what Pickens did. Last June 9, excavators moved in on the mill and dug away at the foundations to make room for a brand new weaveroom.

Pickens isn't alone in capitalizing on basement weaving facilities. In fact, there's a distinct trend in Southern mills—to underground weaverooms.

Four-and-a-half months after starting excavation—October 26, 1960, to be exact—these 96 new looms were in place and running But this new weaveroom didn't boost capacity. That wasn't the idea. The goal was to turn out 50-in. cloth to satisfy customer demand. Therefore, Pickens shut down a small weaveroom on the third floor and took out the looms. Other looms came out of the second-floor weaveroom. Vacant space on each floor is now used for warp storage and bobbin strippers.

COMING: MORE LOOMS

Later, the new basement weaveroom will be extended for more new looms. In fact, there's a chance that all looms may be in the new subterranean area. And thus Pickens' two-point goal will be realized: The mill will be meeting its customers' demand for wider cloth, and at the same time, Pickens will be protecting itself against excess vibration and the problems it can cause.

The new weaveroom is 100 feet wide and 150 feet long—that's 15,000 square feet of usable floor space—additional space the company can put to good use. Ceiling height is 12 feet. There are three widthwise rows of 8-in. supporting columns that form four bays, each 25 feet wide. Lengthwise, there are 14 columns.

About 7,000 cubic yards of dirt had to be dug out to an average depth of 9 feet to build the new weaveroom. The mill used two carloads of cement in mixing concrete for floors and walls.

In putting in and removing temporary girders, the overhead floor had to be jacked up ⅛ inch. The card room is just over the basement. Each time contractors jacked up the floor, cards had to be shimmed and leveled. (Even though the mill was built about 1900, the floor was only ½ inch out of level at the beginning of construction.)

PLANNING AND BUILDING

J. E. Sirrine Co. made plans for the new weaveroom construction, new machinery, and rearrangement of old machinery. Building contractor was Industrial Builders, Inc. Over-all cost: $300,000.

Poured-concrete walls are 34 inches wide, 6 to 10 feet high. Floors are 6 inches of crushed stone, a polyethylene film, welded wire-mesh reinforcing, 5¾-in. concrete slab, and a ¾-in. Kalman surface.

Room finish is quite attractive. It has resulted in better lighting value than expected. Overhead is painted white, upper walls are pastel green, and the lower 4 feet of the wall is a darker green.

Lighting was designed to level off at 50 footcandles after a few weeks. But to date, there's no indication that footcandles will drop to that level. Lighting voltage is 115/230. Continuous-row fluorescent lamps are on 10-ft., 8-in. centers. Fixtures are Westinghouse 15% upward component.

LOOKING AHEAD

Although fixtures are on 10-ft., 8-in. centers today, management has provided for more lighting—if and when it's needed. Channels are

CARTING—Trucks moved right into construction site through this hole in the wall to cart away unwanted dirt.

BUILDING—Concrete wall was poured next, under the old foundation. Workers poured about 5½ feet of wall at a time.

Basement Weaveroom

already in place for in-between fixtures. Battery-powered lamps supply light in emergencies.

The old mill switchgear handled the additional load of the expansion, but it's now up to full capacity. Two Square D feeder panel boards, each of 1,230-amp. capacity, are on columns in the weaveroom well above machinery. Looms are fed through floor ducts with a three-phase, 550-v. circuit.

Along with the basement addition, Pickens built a new outside elevator shaft and a building to house an air-conditioning plant. The new elevator shaft serves the basement and the three main floors of the mill.

Air-conditioning is evaporative cooling (Air Engineering) with a capacity of 40,000 cfm. Two rows of ducts span the weaveroom, and divide the room in three equal parts. Atomizers are at duct openings—15 to each side.

At present, temperature is 80 F. and relative humidty is 83%. But Overseer Paul Mullinax thinks he'll be able to lower the relative humidity as soon as the weave room shakes down. Because the weave room is virtually underground, it is free from outside atmospheric changes. That makes both temperature and relative humidity more easy to control.

Compressed-air lines for blowing off looms come from overhead down eight columns throughout the weaveroom. Looms are blown off every 24 hours by a blow-off hand from the main weaveroom.

ADDING ON FEATURES

The looms are beauties—new, clean, loaded with features. Fact is, they do everything but run themselves. The 50-in., X-2 looms run 188 ppm. on Class-C sheeting. Fabric is 45-inches wide, 56x48, and weighs 3.25 pounds. Warps are 22s, and filling is 24s to 29s.

Overseer Mullinax sees six especially useful loom features:

"1. The Diehl drive is, of course, perfect for our fabrics—no trouble at all.

"2. Hunt let-off is a great contribution to weaving, too. Only trouble we've had is when oiler drops grease on a belt and we have to wipe it off.

"3. Another new feature to us is the aluminum lay. It's sturdy and holds settings well.

"4. Linkage parallels and No. 14 shuttle check work well together. There's practically no shuttle-boxing problem.

"5. Plastic shuttles are for 8¾-in. bobbins. We're running these shuttles on all our looms with five times the shuttle life of conventional shuttles.

"6. Other features that are giving good results are electric warp stop motions, roll-top harness motions, one side fork, two-way adjustable temples, scissors-type temple thread cutters, and Veeder-Root 1, 2, 3, 4 pick counters."

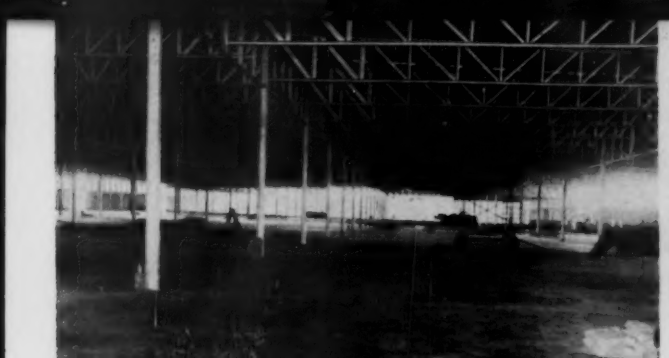
Warps are retied with a new Barber-Colman MC 162 portable tying machine. Average over-all time for warp replacement now is 45 minutes. But the operator is still learning, and this time is expected to be reduced substantially.

Loomfixer training at Pickens has been no great problem. Loomfixers from older E-model looms worked with Draper Corp. erectors as looms were being installed. Now they perform like veterans.

Loom layout is in four long alleys, each with 24 looms. One bay of the room is presently being used by drawing-in hands to redraw warps for a style change. And there's room for more looms.

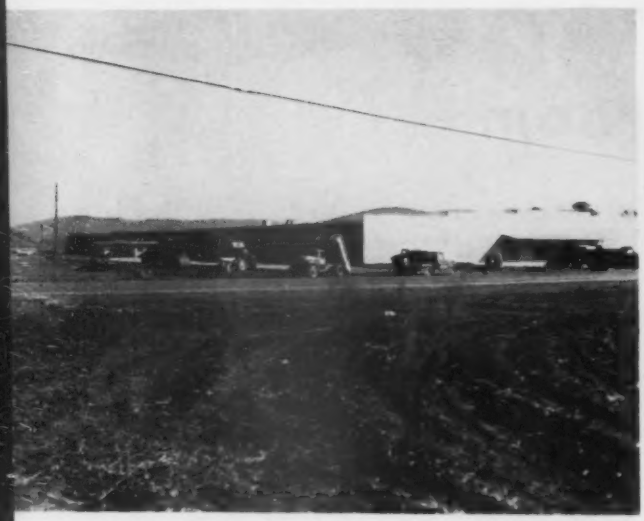
One end of the weaveroom has plenty of space for beam storage. Mill machine-shop mechanics are presently fabricating angle-iron storage racks for warp beams.

As for slashers, old models were only 44½ inches wide. So Pickens installed a new West Point changeover to take 55½-in. loom beams.



BUILDING: At mid-way point, the 161,000 sq.-ft. plant looked like this. Doors at near end are shipping docks.

SMOOTHING: Workers finish leveling off flooring, which is 4 inches thick. Moisture barrier is of plastic.



LANDSCAPING: This is final touch to the finished plant. Material flow begins at far end of plant.

MANAGING: Superintendent can see 80% of employees from his second-floor office. General offices are next door.

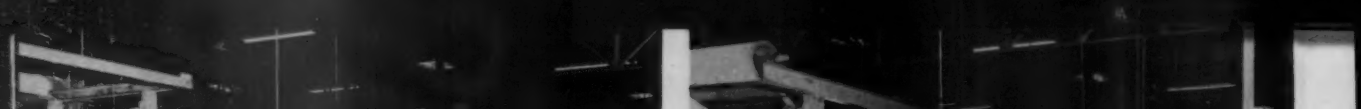
Building and Starting a New

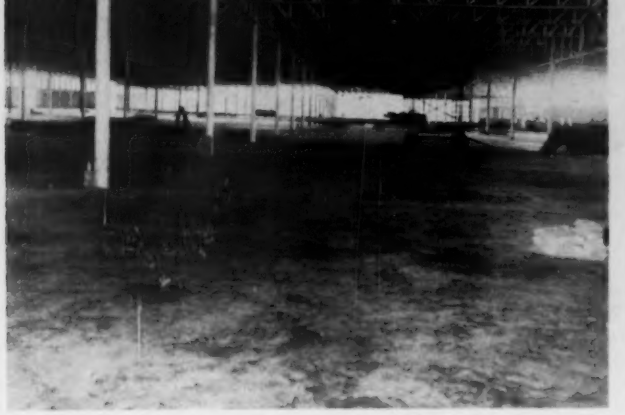
Here, step by step, is how a tufted-carpet mill consolidated its operations into one plant instead of eight. Payoff? Lower manufacturing costs, more efficient handling, greater versatility.

FAST GROWTH of tufted carpets is causing the bigger mills to leave their scattered, multibuilding plants and head into modern, consolidated plants. Latest example: American Carpet Mills, subsidiary of Air Control Products, Inc. Here's the story.

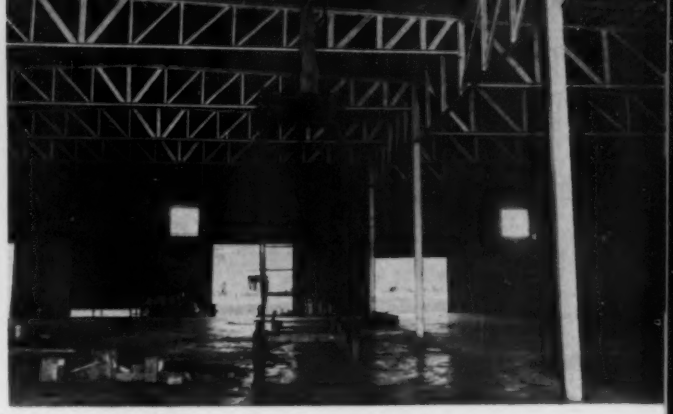
American Carpet has left eight old buildings behind in Dalton, Ga., and entered a spanking new plant in Cartersville, Ga. As the photos show, TEXTILE WORLD was on hand during construction to report details of this new 151,000-sq.-ft., $600,000 building.

Big attraction for American Carpet in Cartersville is the 130-acre Tinsley Park industrial develop-





CLEARING: Contractor cleaned up interior a few days before new equipment moved in. Space between columns—50 feet.



INSTALLING: Workers put-in truss-work. Trussing drops from bay to bay so that center height drops from 19 to 17 feet.

SCANNING: Managers check finished goods from this battery-powered truck. This area is just inside the receiving door.

PRODUCING: All tufting yarn is beamed on these Cocker warpers. This is one big cost-reduction payoff.

Tufted-Carpet Mill

ment, sponsored by the local chamber of commerce. The park is owned by Bartow Industrial Development Corp., a group of Cartersville businessmen. The corporation sells property outright or makes lease-purchase arrangements.

The city furnishes utilities—natural gas, electric power, water. Another attractive feature of American Carpet's new location: the buoyant optimism and the sound business climate of the town. Mayor Charles A. Cowan, for example, one of the Tinsley Park leaders, has great faith in the future. He says, "We don't give a thought to the possibility of a tenant leaving us with a vacant building—another tenant would be right along. We'd think nothing of starting a new 30,000-sq.-ft. industrial building on a day's notice."

The new American Carpet building has several unusual building features built in by Contractor Singletary-Fowler. Some of these features lend themselves to ease in expansion, other insure lower manufacturing costs.

The building is 592 feet long and 250 feet wide. Floors are 4-in. concrete slab over 3½ inches of stone with a vapor barrier and reinforcing wire.

The front wall is jumbo 8x12-in. brick—inside and outside. Every 16 feet there's an expansion 4x8-in. H-column. End walls are 12-in. concrete blocks. Each end wall has four doors for shipping.

The back wall is similar to the

TUFTING from beams results in 900-ft. lengths. Fibers are wool, nylon, rayon, cotton, or blends.

FINISHING is a single-line operation 143 feet long. With long rolls, there's a 10-ft. saving in carpet.

NEW TUFTING MILL . . . *Begins on page* 82

front wall in that it has expansion columns. But the panels in this wall are concrete block, and construction was designed so that the panels can be removed easily to extend the building 100 feet to the back.

Footings for the plant walls are 20 inches wide and 10 inches deep for sides and 26 inches wide and 12 inches deep for ends. Footings for inside roof-supporting columns are 4x4 feet and 14 inches deep.

Columns inside the plant are 6x8-in. H-columns. Widthwise columns are on 50-ft. centers so that bays are 50 feet wide. Lengthwise, the columns are on 32-ft. centers.

BUILT FOR STRENGTH

Trussing is welded steel construction. The lower section of each widthwise girder is 2⅛-in. steel pipe with a smaller pipe inside for added strength. Distance from floor to roof at the center of the mill widthwise is 19 feet. The second section drops to 17 feet and the third (wall) to 15 feet. Lengthwise trussing of much the same construction ties in at each girder.

Rafters are 2x8 inches on 16-in. centers. Deck is ⅜-in. interior plywood—3 feet wide and 7 feet, 2 inches long. Deck is covered with five-ply, 40-lb. felt hot-mopped with asphalt. Slope is ½ inch per foot from center to each side.

LIGHTING THE PLANT

Side windows and skylights substantially increase the light supplied by the fluorescent lamps in the mill. There are two windows (air control) between every pair of H-columns at the sides. Windows are aluminum, 49¼ inches wide and 52⅛ inches high.

The building has 120 skylights, 28x44 inches, with Tobex glass. These are in the three center bays. Floodlights outside the mill come on automatically at dusk and turn off at daylight.

For ventilation, there are five 4-ft. fans in each end of the building. Because of a prevailing breeze from the west, the intake is at the west and the exhaust is at the east.

Office walls are Norman brick 4 inches thick backed by 8-in. concrete blocks. Floors are concrete. Floors of executive offices are covered with American's own carpets. Smaller offices have asphalt-tile covering.

The roof of the office is flat. Rafters are 2x8 inches on 16-in. centers. Deck is 2x6-in., tongue-and-groove pine. Roof is built-up construction with a 15-year bond. Office size is 2,800 square feet.

OVERHEAD—UNCLUTTERED

Electrical conduit and the sprinkler system are overhead in the trussing of the plant so that the production area is totally free from obstructions. Fluorescent lamps are dropped from the roof and are placed as low or high as necessary for good vision at production machines. Tufting machines and the inspection area are lighted to 75 footcandles.

All plant heating is furnished by natural gas-fired individual units (Reznor). Offices are air conditioned. Because the finishing equipment is also heated with natural gas, there's no need for a boiler system. Fact is, there's little service equipment of any kind.

Electric power reaches the mill at 12,000 volts. Three outdoor transformers at the back of the mill and at the lengthwise center reduce the power to 440 volts for machines and 277 volts for lighting. The central control station is just inside the mill near the transformers.

Branch circuit panels and machine-motor starters are nearby—between tufting machines and finishing machines. All electrical control equipment throughout the mill is Square D.

One unusual and functional feature of the mill is a 16x60-ft. indoor section just inside the outdoor office.

The lower floor of this interior construction is concrete block and is used for employee facilities. The upper floor is plywood and glass and is for production and shipping. Superintendent Vern Mauldin can sit at his desk on the second floor and observe the operations of 80% of his production employees.

Near this indoor building there's another small structure that houses the mill shop. Except for these two structures, totaling about 1,400 square feet, there's no service-equipment encumbrance in the whole 148,000-sq.-ft. area of the mill.

This building was begun in the late spring and was completed in midfall. And 30 days after it was turned over to American Carpet it was in full operation. Machines were moved from Dalton to Cartersville within one week. In fact, before the last machine was moved from Dalton the first machine was running at Cartersville.

TABLE 1

INSPECTING area—one of four—is in line with production machines. Painted surface is marked off in 3-in. increments.

SHIPPING is just a little under 600 feet away from the receiving area. Production-control ticket follows carpet.

PAYOFF: LOW COSTS

Raymond Sharwell, American's president, says:

"In our new plant, we'll have the lowest carpet manufacturing costs of any mill in the nation. Straight flow of goods and manufacturing methods make the difference. We already have three times the output of the eight old scattered plants at Dalton. About 50% of this improvement comes from machine layout and 50% from new equipment.

"Just 2½ short years ago this was a bankrupt tufting mill. Today we have a modern building with modern machines. And more machines are to come—early in 1961 we'll get another machine—the latest type of tufting machine made."

Sharwell is top man at American. He keeps his finger tips on every phase of purchasing, manufacturing, and selling. He's backed strongly by three other executives: Andrew V. Crean, his assistant and sales manager; J. A. Wallace, assistant sales manager; and Vernon R. Mauldin, plant superintendent.

There are 200 employees at Cartersville (compared with 110 formerly at Dalton). This area of Georgia is well supplied with skilled tufters. But there's a fair sprinkling of inexperienced workers at the new mill.

Superintendent Mauldin says: "Starting this new mill has been a rough job. We're starting with 16 supervisors. New employees are put with experienced workers to learn each job, and then they're put on production work.

"We have a weekly conference of 2 hours with supervisors. I take notes constantly during the work week. Then we discuss these notes at the meeting. We're able to expand good practices — and correct bad ones."

American makes a lot of carpets of continuous-filament man-made fibers — especially textured yarns. Other carpets are wool, rayon, and cotton, and blends of wool and nylon. Wool carpets are made in eight styles with two-ply and three-ply yarn. Cotton is in one style with two-ply; rayon is in six styles with single-, two-, and three-ply; and wool is in eight styles with two- and three-ply. All yarn is stock dyed.

CHANGING PATTERNS

American's tufting machines are unusual in one way: They draw yarn from several beams rather than from creels through tubing. Vern Mauldin says he can change carpet styles from one set to another 50% faster with the same number of people. A 15-ft. tufting machine requires only a 32x32-ft. floor space.

There are six warpers (Cocker). Warping speed is 200, 253, 300, and 400 yards per minute. Sets range between 2,500 and 7,000 yards. Beams are 54½ inches between heads and 24 to 30 inches in diameter.

Late last fall, there were eight tufting machines at the mill, and one 15-ft. machine was on order. This machine will require creels and tubing for the intricate patterns.

Present machines are Southern Machine and Super Tufter (Singer-Cobble, Inc.) models. Five machines are 15 feet wide, one is 12 feet, one is 9 feet, and a sample machine is 42 inches. Speed is 660 to 720 rpm.

Production machines are in a straight line. The 15-ft. machines have 20 beams with 62 ends per beam; the 12-ft. machine has 16 beams with 62 ends; and the 9-ft. machine has 12 beams with 58 ends.

The sample machine is identical to the wider production machines. Machine rolls, needles, and needle speed are the same. Beams are also identical. There are just fewer of them. Four are usually run. In this way, production carpets are exactly like sample carpets.

There are three employees for each machine: operator, inspector, and mender. New beams are spliced by hand. For friction on beams, sash cords and weights are used as on slashers.

Carpet is tufted in 900-linear-foot lengths, and most of it is cut to 60-ft. lengths after it's finished.

FINISHING FAST

From tufting machines, it's just a few feet to the finishing machines. These machines are in tandem across the mill and are 143 feet long over-all. Carpets are backed in one of four ways: regular latex backing, latex with scrim, foam backing, or an additional jute backing. Machine speed is 30 fpm.

The drying section has three natural-gas-fired burners. Latex comes from a nearby supplier and is stored inside the mill in four tanks. Because carpets are in 900-ft. lengths, American saves about 10 feet of carpet on each roll because stitching is eliminated except at the beginning of the roll.

Four inspection areas are next to the finishing machines. For this area, the concrete floor was stoned, and several coats of latex-base paint were put over the concrete.

TABLE 1

Roving Test Results and Processing Data

Roving set number...	30	2	3	33	34	7	8	9	10	24	11	26	28	15	25
Hank roving.....	0.95	1.00	1.00	1.00	1.00	1.50	1.50	1.50	1.50	1.50	1.75	1.80	2.00	2.00	2.00
Test Results															
% V_d of roving.....	1.21	1.38	0.81	1.40	0.84	1.18	1.11	1.21	1.06	2.06	1.24	1.64	0.97	1.50	1.48
% V_o of roving.....	1.72	1.96	1.16	1.70	1.63	1.61	1.33	1.50	1.31	2.47	1.37	2.85	1.30	2.26	2.31
% V_d of sliver fed..	0.90	....	0.29	1.18	0.94	0.56	0.76	0.83	0.46	1.06	0.62	1.22	0.33	0.60	0.52
% V_o of sliver fed...	1.23	....	1.02	1.77	2.22	1.75	1.12	1.40	0.76	1.61	0.91	2.54	1.33	....	2.41
Processing Data															
Bobbin size.....	11x5½	12x6	10x5	10x5	10x5	10x5	10x5	10x5	10x5	10x5	9x4½	9x4½	9x4½	10x5	10x5
Taper gear.....	18	17	18	17	17	18	18	18	18	17	20	18	19	71	17
Tension gear.....	29	28	58	44	44	37	38	39	40	48	39	40	36	34	31
Twist multiplier.....	1.37	1.15	1.17	1.22	1.22	1.30	1.30	1.30	1.30	1.35	1.23	1.25	1.29	1.30	1.32
Twist (%).....	62.8	52.2	53.2	55.4	55.4	55.2	55.2	55.2	55.2	57.3	50.9	51.5	52.2	53.0	53.4
Coils per inch.....	9	10	8.5	14	12.5	10.4	10.4	10.4	10.4	13.5	11	11.5	12	....	12
Draft (between rolls)															
1 to 2.....	2.0	....	5.7	5.4	5.4	3.6	3.6	3.6	3.6	2.0	4.8	.....	8.9	3.1	....
2 to 3.....	1.05	....	1.2	1.05	1.01	2.5	2.5	2.5	2.5	1.05	2.4	.....	1.5	1.05	....
3 to 4.....	3.8	....	....	1.15	1.15	....	....	....	....	4.9	.....	.....	.....	4.2	....
Total.....	7.0	5.8	6.8	6.5	6.2	9.1	9.1	9.1	9.1	10.2	11.5	15.2	13.3	13.6	12.4
Roll settings (inches)															
1 to 2.....	1.2	2.0	1.2	1.3	1.3	2.1	2.1	2.1	2.1	1.1	2.0	2.0	2.0	1.3	1.3
2 to 3.....	1.8	1.4	1.6	1.7	1.7	1.4	1.4	1.4	1.4	1.8	1.3	1.4	1.3	1.8	1.7
3 to 4.....	1.4	....	....	1.7	1.7	....	....	....	....	1.5	.....	.....	.....	1.5	1.7
Front roll (rpm.).....	168	158	220	217	305	165	165	165	165	154	176	148	166	142	146
Flyer (rpm.).....	775	675	900	943	942	925	925	925	925	895	1,017	888	107	918	1,004
Stock															
Staple															
(in 32nd inch)	33	34	34	34	38	34	34	34	34	33	34	34	34	34	35
Grade.....	M	M	M	SLM	M	M	M	M	M	M	M	M	M	M	M

PROCESSING DATA on which the tests were based. Legend: %V = percent coefficient of variation; $\%V_d$ = within-delivery; $\%V_o$ = frame over-all. All frames have G-38 cones.

What to Do About Hidden Roving Variation

If you're having trouble at spinning and can't locate the causes, try ths simple test for roving variation. It may solve your problem.

HAVING TROUBLE with variation in yarn size and strength? Too many ends down? If so, chances are you're suffering from "hidden roving variation"—even though your quality-control records indicate that roving fed into spinning is within standards.

"What's hidden roving variation?" It's simply this: Those first 100 to 200 yards of roving put on the bobbin when the frame starts up are often stretched excessively. This condition causes expensive quality variation.

The common mill practice of testing only the last layers of stock on the roving bobbin won't give a true picture of variation. Even testing back to the middle of the bobbin can be misleading—the middle layers usually agree with the last

By NORBERT LLOYD ENRICK
Associate Professor, University of Virginia Graduate School of Business Administration, Charlottesville, Va.

layers. And it's natural to assume that the remainder will be about the same, which is true in some instances, but not always.

For example, 1-hk. roving may actually size 1.02 for the first 120 yards, while the first 12 to 24 yards may size from 1.04 to 1.06. These figures represent variation in size of 2 to 6% compared to the overall average size.

To make matters worse, research shows that a 2% light roving at start-up will give 4% weaker yarn strength and up to 6% more unevenness (Uster CV).

TESTING FOR TROUBLE

Here's a simple and easy way to test roving for hidden variation:

1. Check each roving frame once a month by removing three bobbins from the front and three from the back, spaced evenly between the ends and two sides of the frame.

2. Take a roving reel, preferably motorized and equipped with a yardage counter, and strip each bobbin. Then cut the roving into successive 12- and 108-yd. lengths.

3. Use the 12-yd. lengths to obtain size variation coefficients.

4. Combine the 12- and 108-yd. lengths into 120-yd. increments. Then average the results for each row, and make a graph.

After you gain experience in this testing technique, it may become practical to check only the first, middle, and start-up lengths (120 yards) of roving on each bobbin. But in cases of doubt, it's wise to check the complete bobbin.

Compare your start-up sizings with the standards in Table 2. If the roving is excessively light, roving frames need checking and tensions need adjusting. If the size-variation coefficient is off-standard, have the regular mill size-variation technicians look into the matter.

Stretched roving can be greatly reduced by properly adjusting cone-belt starting positions, tension and lay gearing, cone gearing, and twist. It's necessary, however, to run mill tests because no generalized engineering formulas have been discovered to date.

Table 2 gives a comparison of test results made in an "average" mill and a "good" mill. The average mill is one that has ignored hidden roving variation in the past. The good mill—while not necessarily the best—is definitely superior to the average mill because of its testing program.

Test results shown on these pages were obtained from tests run on conventional roving frames. However, even if you have the most advanced equipment it would be wise to check for hidden variation. These frames can get out of adjustment, too.

A systematic program of analysis and control, such as described here, will yield many benefits:

1. Creel breaks at spinning will be minimized—because most breaks occur in the stretched portion of roving. Such breaks are compounded by the increasing tension on the supply package as the roving is pulled off at spinning.

2. Decreased roving variation will increase yarn strength by eliminating weak spots.

3. Reduced variation and unevenness in yarn.

4. Reduced variation in roving and yarn will permit higher front-roll speeds and production rates, which automatically lower cost.

Acknowledgement

The author wishes to acknowledge the over-all assistance and advice given by Dr. Jack Compton, vice president and director of research, Institute of Textile Technology. The work reported herein is based on research and mill consultation while the author was associated with the Institute.

TABLE 2

Experimental Standards for Hidden Roving Variation

(0.6– to 3.0– Hk. Carded and Combed Stock)

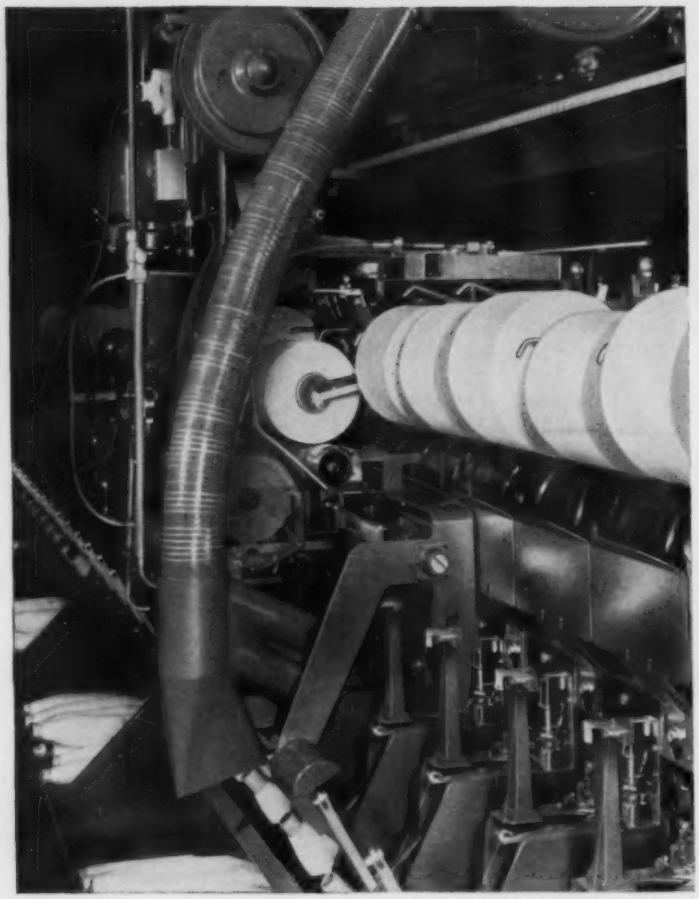
	Hank Size						
	Carded		Combed				
Standards for average mill							
Size at start-up (% light)	0.6	1.0	1.0	1.5	2.0	2.5	3.0
Yarn strength loss (%)	1.5	2.0	2.0	2.3	2.5	2.8	3.0
Yarn unevenness increase (%)	3.0	4.0	4.0	4.6	5.0	5.6	6.0
	4.5	6.0	6.0	6.9	7.5	8.4	9.0
Standards for good mill							
Size at start-up (% light)	0.8	1.0	1.0	1.2	1.3	1.4	1.5
Yarn strength loss (%)	1.6	2.0	2.0	2.4	2.6	2.8	3.0
Yarn unevenness increase (%)	2.4	3.0	3.0	3.6	3.9	4.2	4.5

STANDARDS shown are for carded and combed stock. Cut staple would correspond to carded standards. Standards must be considered tentative because of the wide variation in mill conditions and equipment.

NOW WATCH THIS!

BARBER COLMAN

TYPE FF AUTOMATIC SPOOLER



WINDING 6° CONES AT THE KNITTING ARTS EXHIBITION

APRIL 24 TO 28

ATLANTIC CITY
NEW JERSEY

SPACE 31

Knitters who may be interested in checking the advantages of 6° cones can see an actual demonstration of how these cones are wound, and how well they run on a typical knitting operation. The Barber-Colman Type FF Automatic Spooler in operation will show how low, uniform, air-friction yarn tension — firmness and evenness of wind — minimum of taping — efficient yarn cleaning — ease of operating the machine — and "Every Knot a Weaver's Knot" — all contribute to better, more efficient, lower-cost knitting through the production of better, lower-cost cones.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

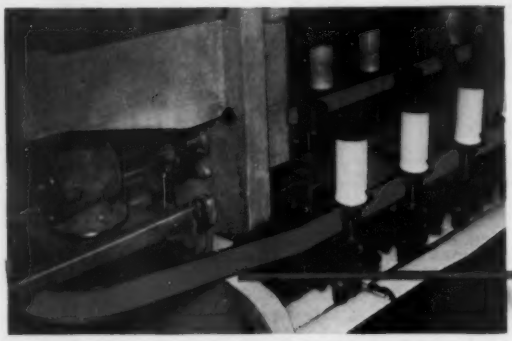
BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-513 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201 / 3 P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

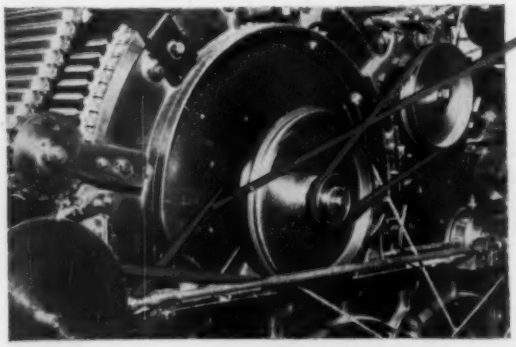
MODERN EXTREMULTUS BELTING



- IMPROVES QUALITY
- INCREASES PRODUCTION
- REDUCES MAINTENANCE
- CUTS COSTS

TWISTERS • constant spindle speed • not affected by oil • outlasts all others

ROVING FRAMES • improves building action • cuts ends down in half • eliminates tension gear changes between doffs



CARDS • improves sliver quality • increases production • eliminates belt take-ups

TWISTERS

AUTO LEVELLERS

WINDERS

PICKERS

SPINNING FRAMES

ROVING FRAMES

OPENERS

LOOMS

WOOLEN CARDS

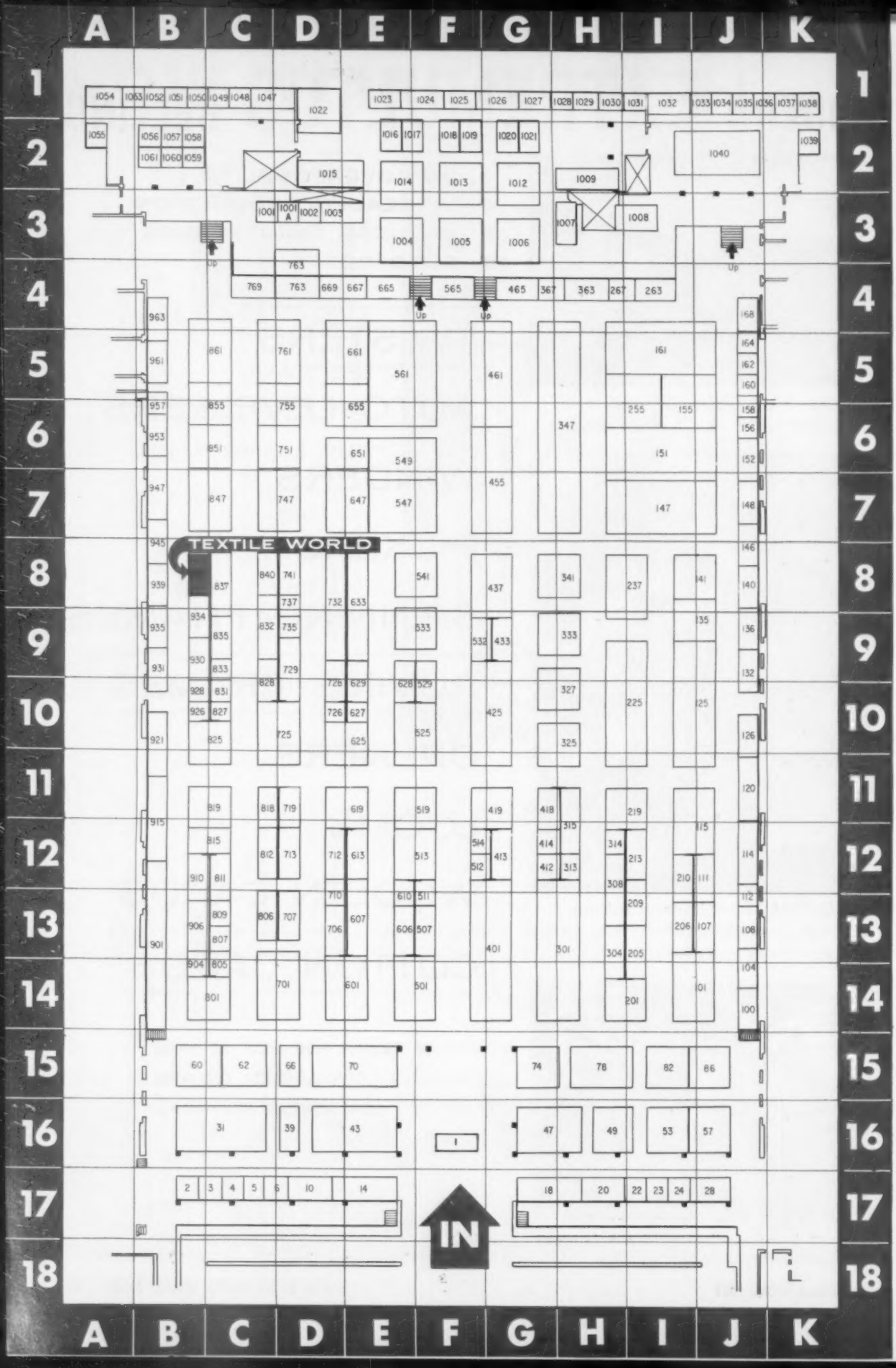
COTTON CARDS

WRITE TO-DAY FOR NEW 12 PAGE BULLETIN CONTAINING COMPREHENSIVE ENGINEERING AND APPLICATION DATA.

EXTREMULTUS, INC.

25-11 40th Avenue, Long Island City 1, N. Y.

CIRCLE 89 ON READER SERVICE CARD


A B C D E F G H I J K
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
TEXTILE WORLD
IN
Up

Your Guide to the Show

NOW'S THE TIME to get ready for your trip to the Knitting Arts Show at the end of the month (the show runs April 24 to 28).

Here, on these pages, you'll find the list of exhibitors—alphabetically arranged—each listing includes the booth number. Then on page 96 you'll find a list of exhibited products that are classified according to the kind of job you want done—knitting, dyeing, or laminating, for example.

Look the guide over, familiarize yourself with what's in store for you at the show, make notes if you like. Then tear it out of the issue along the perforated line. Place three staples along the edge—thus make this your on-the-spot ready-made reference book at the show. You'll find it invaluable.

HOW TO USE THIS GUIDE

Want to find a particular exhibitor? Look up the company's name in the Index to Exhibitors. Next to it you'll find the booth number, a letter and another number under the column headed MAP.

The letter and the number under the heading MAP are coordinates that work with the *red* lines on the map (left) just like the coordinates on a road map. The lettered lines run vertically. Numbered lines run horizontally.

You'll find any booth by using the coordinate lines—or rather the spaces between—just the way you us road-map coordinates to locate a city or town. Take the first listing: Aberfoyle Mfg. Co., 325, H-10. You'll find it under the H, in the tenth row.

You may also use these coordinates to find a company's booth listed under the Index to Products, by again referring to the Index to Exhibitors, where all of the companies are listed in alphabetical order.

INDEX TO EXHIBITORS

EXHIBITOR	BOOTH	MAP
A		
Aberfoyle Mfg. Co.	325	H-10
Adelaide Mills	108	J-13
Represented by Brant Yarns, Inc.		
Ainslie Knitting Machine Co.	1003	D-3
Allied Chemical Co.	219	I-11
American Aniline & Extract Co.	737	D-8
American Cyanamid Co.	751	D-6
American Dyestuff Reporter	210	I-12
American & Efird Mills, Inc.	625	E-10
American Enka Corp.	86	J-15
American Laundry Machine Co.	930	B-9
American Safety Table Co., Inc.	801	C-14
American Thread Co., Inc.	519	F-11
American Viscose Corp.	62	C-15
America's Textile Reporter	210	I-12
Amsco Packaging Machinery, Inc.	14	E-17
Atkinson, Haserick & Co., Inc.	1009	H-2
Atwater Throwing Co.	627	E-10

. . . *Turn the page*

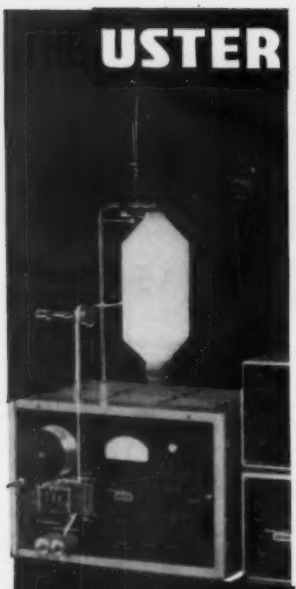
INDEX TO EXHIBITORS . . . *Begins on page 91*

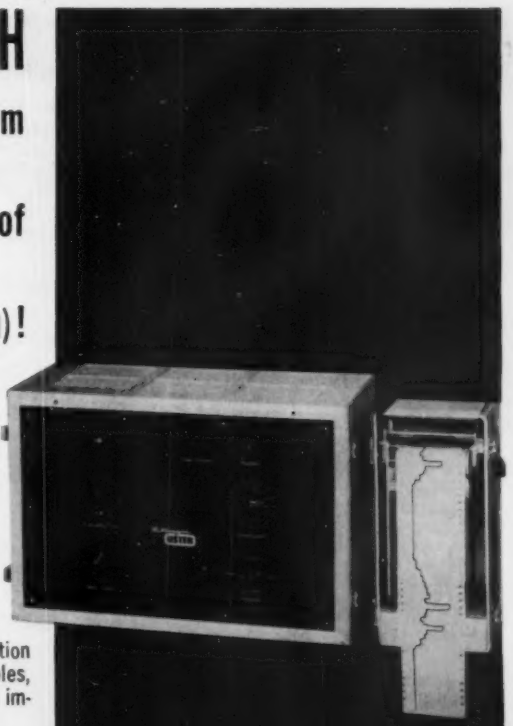
EXHIBITOR	BOOTH	MAP
B		
Bancroft & Sons Co., Joseph	115	J-12
Barber-Colman Co.	31	C-16
Bellman GmbH., Eugen	851	C-6
Belmont Throwing Corp.	108	J-13
Represented by Brant Yarns, Inc.		
Bentley Knitting Machinery Org., Inc.	347	H-6
Bowling Green Spinning Co.	66	D-15
Represented by Latta, Currier Co., Inc.		
Brant Yarns, Inc.	108	J-13
Representing Adelaide Mills, Belmont Throwing Corp.		
Bruckner Machinery Corp.	1025	F-1
Burlington Engineering Sales Co.	1018	F-2
C		
C. I. T. Corp.	945	B-8
Cannon Mills, Inc.	201	I-14
Carbert Mfg. Co., Inc.	20	H-17
Caron Spinning Co.	514	F-12
Carr Fastener Co. Div., United Carr-Fastener Corp.	1026	G-1
Cashmere Corp. of America Ltd.	66	D-15
Represented by Latta, Currier Co., Inc.		
Celanese Fibers Co.	70	E-15
Central Yarn & Dyeing Co.	610	E-13
Represented by Kemfast Textiles, Inc.		
Chandler Machine Co.	714	D-8
Charlottesville Woolen Mills	818	C-11
Represented by John F. Street Co.		
Chemstrand Corp.	921	B-10
Cheraw Cotton Mills	66	D-15
Represented by Latta, Currier Co., Inc.		
Cobert Associates, Joseph C.	1002	D-3
Cocker Machine & Foundry Co.	47	G-16
Collins & Aikman Corp.	28	J-17
Comer-Avondale Mills, Inc.	333	H-9
Compressor Corp. of America	1023	E-1
Cotton Yarns, Inc.	126	J-10
Courtaulds (Ala.), Inc.	1004	E-3
Crawford Co., Inc., H. E.	74	G-15
Cross Cotton Mills Co.	712	D-12
Cummings-Landau Laundry Machinery Co., Inc.	304	H-13
Cutting Room Appliances Corp.	419	G-11
D		
Daily News Record	931	B-9
Davison Publishing Co.	939	B-8
Dennison Mfg. Co.	511	F-13
Dixie Mercerizing Co., Inc.	501	F-14
Doughboy Industries	1008	I-3
Dubied Machinery Co.	327	H-10
du Pont de Nemours & Co., Inc., E. I.	301	H-13
E		
Eastern Yarn Mills, Inc.	847	C-7
Eastman Chemical Products, Inc.	136	J-9
Eberly, Inc., John A.	418	G-11
Emsig Mfg. Co.	629	E-10
Engineered Plastics, Inc.	5	C-17
Errich International	206	I-13
Etherington Bros., Inc.	314	H-12
F		
Fabrionics Corp.	112	J-13
Faigenbaum, Roy D.	769	C-4
Fairchild Publications	827	C-10
Fancourt Co., W. F.	606	E-13
Feustel, Inc., Ernest A.	107	J-13
Firsching & Sons, Inc., J. A.	840	C-8
Fitchburg Spinners Sales Corp.	66	D-15
Represented by Latta, Currier Co., Inc.		
Fletcher Industries	601	E-14
Forte Engineering Co.	6	D-17
Foster Machine Co.	43	E-16
Fouquet-Werk Frauz & Planck	661	E-5
Franklin Process Co.	661	E-5
G		
Garment Finishing Equipment Corp.	832	C-9
Gaston County Dyeing Machine Co.	647	E-7
General Foam Corp.	667	E-4
Ginsberg Machine Co., Inc.	141	J-8
Globe Dye Works Co.	806	C-13
Globe Mills Co.	818	C-11
Represented by John F. Street Co.		
Green Associates, Abner B.	1031	I-1
Gross Embroidery Automat, Inc., Erick	263	I-4
H		
Harding, Inc., H. C.	953	B-6
Harriet-Henderson Cotton Mills	607	E-13
Hayes Industries, Inc.	4	C-17
Heany Industrial Ceramic Corp.	669	D-4
Henrici Laundry Machine Co.	809	C-13
Herr Mfg. Co., Inc.	363	H-4
Highland Cotton Mills, Inc.	413	G-12
Hofmann Needle Works, Inc., Alfred	633	E-8
Hosiery & Underwear Review & Lingerie Merchandising	114	J-12
Hudson Automatic Machine & Tool Co.	465	G-4
I		
Indian Orchard Finishing Co.	465	G-4
Industrial Dryer Corp.	132	J-9
International Silk Association, Inc.	57	J-16
International Textile Machine Co.	819	C-11
Interstate Textile Equipment Co.	158	J-6
Ives Co., Inc., Loyal T.	837	C-8
J		
Jet Age Knitwear Machinery Corp.	225	I-10
Johnston Mills Co.	706	D-13
Jordan Mills	613	E-12
K		
Kemfast Textiles, Inc.	610	E-13
Representing Central Yarn & Dyeing Co.		
Kent Mfg. Co.	818	C-11
Represented by John F. Street Co.		
Keystone Dyeing Co.	1019	F-2
Kidde Textile Machinery Corp.	39	D-16
Kimball Co., A.	313	H-12
Kirsten, Inc., Olaf R.	1027	G-1
Klauder Weldon Giles Machine Co.	947	B-7
Klein & Co., Inc., John	755	D-6
Representing Santoni Co.		
Klumpp Co., Joseph	414	G-12
Knitrol, Div. of Uster Corp.	1029	H-1
Knitter, The	1	F-16
Knitting Industry Weekly	210	I-12
Knitting Machine & Supply Co.	315	H-12
Representing H. Stoll & Co.		
Knitting Mill News	22	I-17
Kopelowitz, Inc., Joseph	855	C-6
Kulicke & Soffa	155	I-6
L		
Laconia Cooper Sales Corp.	732	D-8
Lamb Knitting Machine Corp.	934	D-9

. . . Turn the page

USTER SPECTROGRAPH

will keep you from being buried under countless yards of unprofitable cloth . . . (or yarn)!





DEJECTED because cloth seconds or inferior yarns are eating into your mill profits? Now you can get relief fast, Fast, FAST with the Spectrograph!

Working simultaneously with the Evenness Tester, the Spectrograph can quickly and accurately isolate and expose the source of error in each phase of yarn manufacturing. No additional testing time is required.

A simple test allows personnel with very little training to evaluate the information and pinpoint **in minutes** mechanical troubles, and fiber control problems resulting from improper draft zone settings.

In many cases, minor adjustments can bring present production equipment up to peak or optimum efficiency at little or no cost.

Keep your production seconds down, or you too may be buried under countless yards of unprofitable cloth or yarn.

Avoid this by contacting...

USTER CORPORATION
CHARLOTTE 8, NORTH CAROLINA

Sales Offices: Charlotte, North Carolina
Canadian Sales Offices: Hugh Williams & Company, 27 Wellington Street East, Toronto 1, Ontario

INDEX TO EXHIBITORS . . . *Begins on page 91*

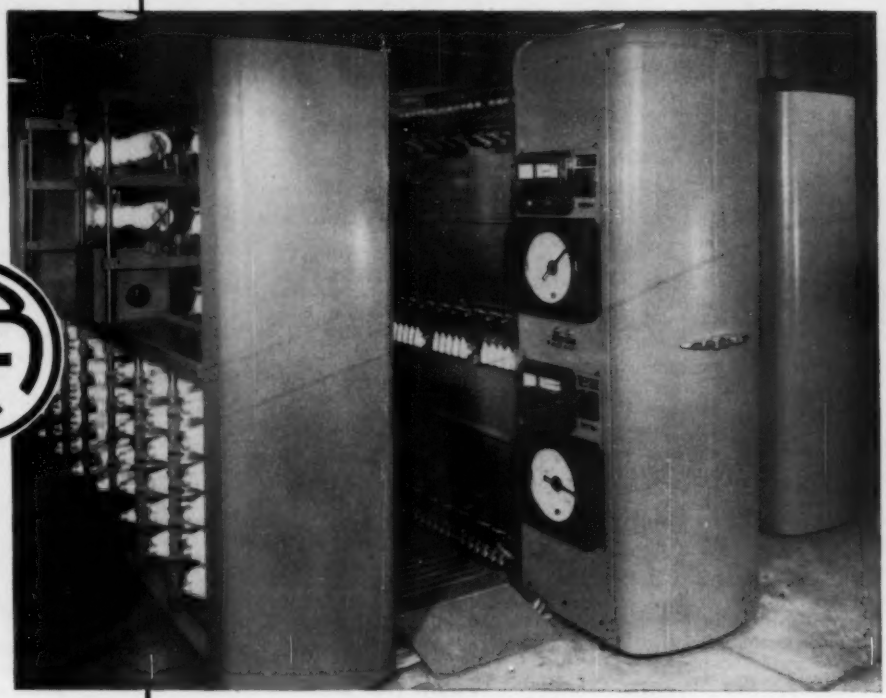
EXHIBITOR	BOOTH	MAP
Lassiter Corp.	619	E-11
Latta, Currier Co., Inc.	66	D-15
Representing Bowling Green Spinning Co.; Cheraw Cotton Mills; Cashmere Corp. of America Ltd.; Fitchburg Spinners Sales Corp.; Roselon Yarns, Inc.; Sterling Cotton Mills, Inc.; Swans, Inc.		
Laurel Soap Mfg. Co., Inc.	713	D-12
Leatex Chemical Co.	100	J-14
Legge Co., Percy A.	651	E-6
Leesona Corp.	547	E-7
Leon-Ferenbach, Inc.	957	B-6
Liba Maschinenfabrik GmbH.	901	B-13
Represented by Robert Reiner, Inc.		
Liberty Throwing Co., Inc.	728	D-10
Lidz Brothers, Inc.	831	C-10
Liebers & Co.	1021	G-2
M		
Markem Machine Co.	628	E-10
Marley Distributing Co., Inc., Stanford	164	J-5
Representing Universo, S. A.		
Marvel Specialty Co.	308	H-12
Mason Silk Co.	1028	H-1
Mayer Textile Machine Corp.	747	D-7
Mehl Mfg. Co.	910	B-12
Merrow Machine Co.	135	J-10
Meyers & Co., Clarence L.	533	F-9
Milpac Dyeing Co., Inc.	2	B-17
Milton Machine Works, Inc.	735	D-9
Modern Textiles Magazine	963	B-4
Monarch Marking System Co.	710	D-13
Montrose Supply & Equipment Co.	1024	F-1
Morgan Dyeing & Bleaching Co.	512	F-12
Muller & Co., L. P.	507	F-13
N		
Namm & Singer	23	I-17
Narrow Fabric Co.	513	F-12
National Industrial Machinery Corp.	433	G-9
National Spinning Co., Inc.	1006	G-3
National Vulcanized Fibre Co.	915	B-12
O		
Old Dominion Box Co.	1001	C-3
Ordnance Gauge Co.	729	D-9
P		
Panamerican Publishing Co., Inc.	926	B-10
Paramount Textile Machinery Co.	237	I-8
Parizek Mfg. Co., Frank	162	J-5
Pellon Corp.	213	I-13
Pernick Co., Inc., Joseph	805	C-14
Pharr Worsted Mills, Inc.	49	H-16
Philadelphia Metal Drying Form Inc.	665	E-4
Piedmont Processing Co.	532	F-9
Q		
Queens Machine Corp.	120	J-11
R		
Reece Corp.	825	C-10
Refined Products Co.	1001A	D-3
Reiner Inc., Robert	901	B-13
Representing Liba Maschinenfabrik GmbH.; Schaffhausen Machine Works Ltd.		
Reliable Machine Works, Inc.	726	D-10
Rhodia, Inc.	205	I-13
Richmond Oil, Soap & Chemical Co., Inc.	267	H-4
Rimoldi & Co., S.p.A.	82	I-15
Represented by U. S. Blind Stitch Machine Corp.		
Rochester Button Co.	906	B-13
Roselon Yarns, Inc.	66	D-15
Represented by Latta, Currier Co., Inc.		
Rothkopf & Co., Inc., Mac M.	763	D-4
Roxboro Cotton Mills	818	C-11
Represented by John F. Street Co., Inc.		
S		
Saco-Lowell Shops	78	H-15
Salmon Associates, Inc., Kurt	807	C-13
Sanitized Sales Co. of America Inc.	835	C-9
Santoni Co.	755	D-6
Represented by John Klein & Co., Inc.		
Schaffhausen Machine Works Ltd.	901	B-13
Represented by Robert Reiner, Inc.		
Scholler Bros., Inc.	701	D-14
Schwabe, Inc., Herman	1030	H-1
Scott & Williams, Inc.	561	E-5
Scovill Mfg. Co.	412	G-12
Seamless Knitting Machinery Corp.	861	C-5
Seller Mfg. Co.	60	B-15
Servo-Stop	961	B-5
Shell Oil Co.	18	G-17
Singer-Fidelity, Inc.	461	G-5
Singer Sewing Machine Co.	455	G-7
Soaber Co.	104	J-14
Sonoco Products Co.	209	I-13
Speizman Co., Inc., Morris	161	I-5
Representing C. Terrot Soehne; Establishment Domisse; Gottlieb Eppinger K. G.		
Southern Textile Machinery Co.	53	I-16
Southern Textile News	156	J-6
Standard-Coosa-Thatcher Co.	541	F-8
Standard Financial Corp.	24	I-17
Steele Canvas Basket Co., Inc.	367	H-4
Sterling Cotton Mills, Inc.	66	D-15
Represented by Latta, Currier Co., Inc.		
Stevens & Co., Inc., J. P.	815	C-12
Stoll & Co., H.	315	H-12
Represented by Knitting Machine & Supply Co.		
Stonehill Knitting Machines Corp.	725	D-10
Stop-Motion Devices Corp.	761	D-5
Street Co., John F.	818	C-11
Representing Roxboro Cotton Mills; Globe Mills Co.; Kent Mfg. Co.; Charlottesville Woolen Mills		
Supreme Knitting Machine Co., Inc.	125	J-10
Swans, Inc.	66	D-15
Represented by Latta, Currier Co., Inc.		
T		
Talcott, Inc., James	833	C-9
Textiles, Inc.	828	C-10
Textile Industries	111	J-12
Textile Machine Works	401	G-13
TEXTILE WORLD	940	B-8
Textured Yarn Co., Inc.	1007	H-3
Threads, Inc.	935	B-9
Tompkins Bros. Co., Inc.	10	D-17
Torrington Co.	437	G-8
Tricoma, Inc.	655	E-6
Tubular Textile Machinery Corp.	101	J-14
Turbo Machine Co.	151	I-6
Twitchell, Inc., E. W.	140	J-8
U		
Union Carbide Chemicals Co.	719	D-11
Union Special Machine Co.	425	G-10
United Elastic Corp.	341	H-8
U. S. Blind Stitch Machine Corp.	82	I-15
Representing Rimoldi & Co., S.p.A.		
United States Leasing Corp.	1031	I-1
U. S. Rubber Co.	525	F-10
Universo S. A.	164	J-5
Represented by Stanford Marley Distributing Co., Inc.		
Utica Novelty & Mill Specialty Co.	146	J-8
V		
Venango Engineering Co.	565	F-4
W		
Waterman, Merrill, Largen & Co., Inc.	529	F-10
Whitin Machine Works	1005	F-3
Wildman Jacquard Co.	147	I-7
Willcox & Gibbs Sewing Machine Co.	549	E-6

For Index to Products . . . Turn to page 96

START RIGHT and you'll "FINISH" RIGHT!

with textured yarns processed by Whitin-ARCT.*

Start with the unmatched quality found only in ARCT precision-controlled yarns — and watch your "finishing" troubles vanish — in either knitted or woven textured fabrics.



* Whitin Machine Works is the exclusive licensee of A.R.C.T. in the United States, Mexico and Canada. FT and FTF machines are manufactured by Ateliers Roannais de Constructions Textiles, Roanne, France.

The ARCT Type FT machine, introduced only two years ago by Whitin, has already made a great impact on American throwsters with the quality of its false twist and stretch yarns for knitting — quality unsurpassed for uniformity, elasticity, crimp-retention and level dye affinity.

Now, to the exciting and expanding field of woven textured fabrics, Whitin brings a great new companion machine, the ARCT type FTF for the processing of "modified" yarns with the same "golden touch" of quality. Built with the same critical care — the FTF features the same precision in yarn control — the same exactness in mechanical and thermal controls — eliminating the possibility of variables being present during yarn processing — even holding spindle-to-spindle heat variation to a hard-to-believe ± 1°C.

FTF processed yarns, characterized by outstanding dimensional stability and maximum bulking, may be precisely tailored to your product requirement.

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

See the FTF machine at Booth 1005 — Knitting Arts Exhibition • Atlantic City • April 24-28

CIRCLE 95 ON READER SERVICE CARD

INDEX TO PRODUCTS

Bobbins, spools 96
Cutting-room equipment 96
Dyeing, finishing equipment 96
Finishing materials for yarns and fabrics 96
Foam (for laminates) 96
Garment accessories 96
Garment-manufacturing equipment 96
Knitting-machine accessories 96
Knitting machines — circular.... 98
Knitting machines — hosiery.... 98
Knitting machines — jacquard... 98
Knitting machines — warp..... 98
Label-printing, attaching machines 98
Lubricants 98
Material-handling equipment 98
Napping, brushing machines..... 98
Narrow-fabric equipment 98
Packaging equipment 98
Packaging materials 98
Spinning frames 98
Tension devices, thread guides.... 98
Testing, inspecting equipment.... 100
Thread, sewing 100
Transfer machines 100
Twisters 100
Warping equipment 100
Winding, spooling machines..... 100
Yarn conditioners 100
Yarns — blends 100
Yarns — cotton 100
Yarns — man-made-fiber 100
Yarns — wool or worsted..... 100
Yarns — texturized or bulky..... 100
Embroidery machines 96

Bobbins and Spools

Sonoco Products Co. 209

Cutting-Room Equipment

Chandler Machine Co. 811
Sample cutting-pinking machine

Cutting Room Appliances Corp. 419
Cloth spreaders, rerolling machine, cutting tables, thread trimmers, tensionless spreaders*

Firsching & Son, Inc., J. A. 840
Cutting and winding machines, cloth-spreading machines

Montrose Supply & Equipment Co. 1024
Die-cutting machines*, band-cutting machines*, string machines*, pom-pom machines*

Schwabe, Inc., Herman 1030
Die-cutting machine*

Utica Novelty & Mill Specialty Co. 146
Cuff-cutting and turning machine, collarette cutting and winding machine, laying-up machine

Dyeing and Finishing Equipment

American Laundry Machinery Industries 930
Washer-extractors*

Bellman GmbH., Eugen 851
Hosiery dyeboarder*

Bentley Knitting Machinery Organization, Inc. 347
Hank-dyeing machine

Cummings Landau Laundry Machinery Co., Inc. 304
Washer, extractor, tumble dryer*

Henrici Laundry Machinery Co. 809
Washing machine, tumble dryers

International Textile Machine Co. 819
Hosiery boarding machines*

Klauder Weldon Giles Machine Co. 947
Skein-dyeing machine*, paddle-wheel dyeing machine

Saco-Lowell Shops 78
Dryer

Speizman Co., Inc., Morris 161
Fabric-finishing machine*

Tubular Textile Machinery Corp. 101
Dryer, calender, matching machine, extractor pad, padder, open-width finishing machine

Turbo Machine Co. 151
Electro finisher*, spreader steamer*, padder-extractor*, framing machine*, dye boarder, rotary dyeing and washing machine

Venango Engineering Co. 565
Package-dyeing equipment, washing and dyeing machine

Embroidery Machines

Gross Embroidery Automat, Inc., Erick 263

Finishing Materials For Yarns and Fabrics

American Aniline & Extract Co., Inc. 737
Sizes*, yarn lubricants*, detergents

Fancourt Co., W. F. 606

Laurel Soap Mfg. Co., Inc. 713
Yarn lubricants, soap, softeners, flame-retardant and water-repellent finishes, dyeing assistants and finishes

Leatex Chemical Co. 100

Refined Products Co. 1001A
Finished knit goods

Richmond Oil, Soap & Chemical Co., Inc. 267
Chemicals for spinning, coning, knitting, scouring, dyeing and finishing

Sanitized Sales Co. of America, Inc. 835
Sanitized chemicals

Scholler Brothers, Inc. 701
Finishes

Foam (for Laminates)

General Foam Corp. 667

Garment Accessories

Carr Fastener Co. 1026
Snap fasteners

Lidz Bros., Inc. 831
Buttons

Namm & Singer, Inc. 23
Pearl buttons*

Narrow Fabric Co. 513
Braids, laces

Parizek Mfg. Co., Frank 162
Buttons

Pellon Corp. 213
Nonwoven tear-away material*

Scovill Mfg. Co. 412
Snap fasteners

United Elastic Corp. 341
Braid, cord, elastic and non-elastic webbing, power net, raschel-knit fabric

Willcox & Gibbs Sewing Machine Co. 549
Sewing machines, dielectric sealing

Garment-Manufacturing Equipment

Carr Fastener Co. 1026
Snap-fastener attaching equipment

Chandler Machine Co. 811
Pleating machine, button-sewing machine

Ginsberg Machine Co., Inc. 141
Angle strap cutter, tape sewer, shirt folder, chain cutter

Merrow Machine Co. 135
Overstitch sewing machines for underwear, outerwear, and hosiery applications

Namm & Singer, Inc. 23
Button-sewing machine

Parizek Mfg. Co., Frank 162
Button-attaching devices*

Reece Corp. 825
Buttonhole machine, edge finishers*, tacking machine, label-sewing machine*, pocket-welting machine

Singer Sewing Machine Co. 455
Button sewer, hosiery seamer, label sewer, single-needle lockstitcher, overedger, zig-zag machine, automatic tacker, blind-stitch machine

Torrington Co. 437
Sewing-machine needles

Union Special Machine Co. 425
Sewing machines

U. S. Blind Stitch Machine Corp. 82
Blind stitch; 3-thread overlock; mock-safety stitch; seaming; 2-thread overlock; 2-thread flat bed; 2-thread, double-lock chain stitch

Knitting-Machine Accessories

Eberly, Inc., John A. 418
Latch needles, sinkers, jacks, sliders, tools

Faigenbaum, Roy D. 769
Sinkers, transfer jacks, cylinder jacks, mesh attachments

Feustel, Inc., Ernest A. 107
Carriers and tubes for full-fashioned machines, flat parts for hosiery machines*, hosiery-latch needles*

Herr Mfg. Co., Inc. 363
Conical rings*

Hofmann Needle Works, Inc., Alfred 633
Spring beard needles

Ives Co., Inc., Loyal T. 837
Spring beard needles, sinkers, jacks, sliders and points

. . . *Turn the page*

* New since Knitting Arts Show, 1959

CIRCLE 97 ON READER SERVICE CARD→

SONOCO PRODUCTS COMPANY
CASE HISTORY NO. 3301

PROBLEM: Replace heavy returnable yarn carriers

Many of Sonoco's customers wanted an economical, expendable tube for shipping yarn. The heavy returnable dye tubes in use were responsible for a substantial portion of yarn shipping costs. These tubes were expensive and had to be returned to the mill.

Sonoco developed an economical one-time-use transfer or push-out paper tube with the necessary critical dimensions and controlled stability. In solving the original problem, the new carrier also allowed the mills to greatly reduce the number of stainless steel dye tubes previously required. And, their customers did not have the problem of returning the permanent type tube. In some instances the Sonoco transfer tube saved a costly rewinding operation.

Product development of this type is an *added benefit* when you buy from Sonoco. *Only Sonoco,* in its field, provides the continuous research, technical service and integrated manufacturing needed to meet the ever-changing techniques of the textile industry. *Let Sonoco's more than 60 years' experience help you.*

visit SONOCO
AT THE KNITTING
ARTS EXHIBITION
ATLANTIC CITY, N. J.
APRIL 24-APRIL 28, 1961
BOOTHS 209-211

SONOCO
Products for Textiles

sonoco
PAPER PRODUCTS

SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA • Mystic, Conn. • Akron, Ind. • Ravenna, Ohio • Lowell, Mass. • Holyoke, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Richmond, Va. • **MEXICO:** Mexico, D.F. • **CANADA:** Brantford, Ont. • Granby, Quebec

3017

Knitrol, Div. of Uster Corp. 1029
Yarn cutter
Liebers & Co. 1021
Sinkers, split dividers, jacks, bits, sinker heads, k.o. bars
Marvel Specialty Co. 308
Ceramic throat plates
Montrose Supply & Equipment Co. 1024
Springs, brushes, porcelains, control cords, gears, etc.
Rothkopf & Co., Inc., Mac M. 763
Latch needles
Stop-Motion Devices Corp. 761
Knitting-machine electric stopmotion, sewing-machine electric stops, weighted tension assemblies, cone holders, hole and press-off detectors, rotary fabric lights
Textile Machine Works 401
Latch and spring-beard needles
Torrington Co. 437
Seamless hosiery needle, leaded units for tricot and raschel machines, latch knitting-machine needles, flat parts

Knitting Machines—Circular

Ainslie Knitting Machine Co. 1003
String machine*
Bentley Knitting Machinery Organization, Inc. 347
Jet Age Knitwear Machine Corp. 225
Sweater-strip machine*
Lamb Knitting Machine Corp. 934
Double head for trims
Rothkopf & Co., Inc., Mac M. 763
Pattern underwear-knit machine*
Santoni Co. 755
Single feed, double feed
Speizman Co., Inc., Morris 161
Double-knit jersey machine*
Supreme Knitting Machine Co., Inc. 125
Tompkins Bros. Co., Inc. 10
Carpet-knitting machines

Knitting Machines—Flat Bed

Ainslie Knitting Machine Co. 1003
Border machine*, hand flat knitter*
Bentley Knitting Machinery Organization, Inc. 347
Full-fashion knitting machine
Dubied Machinery Co. 327
Power flat-knitting machine*, hand flat-knitting machine*
Jet Age Knitwear Machinery Corp. 225
Full-fashioned sweater machine*, flat power machine*
Knitting Machine & Supply Co., Inc. 315
Power-knitting machines, flat-knitting machine*
Kopelowitz, Inc., Joseph 855
Flat power-knitting machines*
Queens Machine Corp. 120
V-type knitting machine*; tandem-carriage knitting machine*, flat; V-type, border-knitting machine*
Reiner, Inc., Robert 901
V-bed knitters*
Rothkopf & Co., Inc., Mac M. 763
63-in. knitting machine*

* New since Knitting Arts Show, 1959

Stonehill Knitting Machines Corp. 725
4-bar flat knitting*, 6-bar flat knitting*
Textile Machine Works 401
Full-fashioned outerwear machine

Knitting Machines—Hosiery

Bentley Knitting Machinery Organization, Inc. 347
Ribknit, hosiery, seamless-hosiery
National Industrial Machinery Corp. 433
Seamless-knitting machines
Scott & Williams, Inc. 561
Seamless and half-hose machines
Speizman Co., Inc., Morris 161
Seamless-hosiery knitter
Textile Machine Works 401
Full-fashioned knitting machine

Knitting Machines—Jacquard

Dubied Machinery Co. 327
Fine-rib knitting machine*
Jet Age Knitwear Machinery Corp. 225
Double-jersey pique machine*
Knitting Machine & Supply Co., Inc. 315
Rothkopf & Co., Inc., Mac M. 763
Double-jersey machine*
Speizman Co., Inc., Morris 161
Interlock knitter*
Stonehill Knitting Machines Corp. 725
Circular*

Knitting Machines—Warp

Mayer Textile Machinery Corp. 714
Tricot machine*, raschel knitter*
Reiner, Inc., Robert 901
Tricot machines
Textile Machine Works 401
Tricot machine

Label-Printing and Attaching Machines

Amsco Packaging Machinery, Inc. 14
Label applicator*
Carbert Mfg. Co. 20
Label printer and applicator*
Dennison Mfg. Co. 511
Tag-printing machines
Kimball Co., A. 313
Labeling systems
Markem Machine Co. 628
Hosiery-box marker*
Monarch Marking System Co. 710
Imprinter and applicator for product lines*, imprinter and applicator for bags and boxes*

Lubricants

Shell Oil Co. 18
Knitting-machine oils

Material-Handling Equipment

Klauder Weldon Giles Machine Co. 947
Yarn-carrier trucks*, dyehouse truck*
Marvel Specialty Co. 308
Carrying trays
National Vulcanized Fibre Co. 915
Bobbins, roving cans, floor trucks, tote boxes, trays, waste receptacles
Singer Sewing Machine Co. 455
Work troughs
Steele Canvas Basket Co., Inc. 367
Canvas baskets, trucks, hampers, bags

Napping and Brushing Machines

Ainslie Knitting Machine Co. 1003
Brushing machine*

Narrow-Fabric Equipment

Fletcher Industries 601
Elastic loom

Packaging Equipment

Amsco Packaging Machinery, Inc 14
Sealing machines*, bag sealers
Carbert Mfg. Co. 20
Bag-sealing machine*
Errich International Corp. 206
Bag sealers*, bar sealer*, bag packager*

Packaging Materials

American Viscose Corp. 62
Cord strapping*
Lassister Corp., Div. of Riegel Paper Corp. 619
Hosiery envelopes*
Mehl Mfg. Co. 910
Polyethylene film (plain and printed)
Old Dominion Box Co., Inc. 1001
Folding carton, set-up type

Spinning Frames

Saco-Lowell Shops 78
Worsted-spinning frame

Tension Devices and Thread Guides

Fabrionics Corp. 112
Tension devices
Faigenbaum, Roy D. 769
Tension devices*
Foster Machine Co. 43
Electrotense tensions
Heany Industrial Ceramic Corp. 669
Thread guides, tension devices

Super Precision Finish!

"SUPER-PRECISION" IVES FINISH

Here is a truly superior finish that will prove its super-precision title under any close inspection test you give it. Its perfect finish at critical working points means smooth trouble-free production!

5X MAGNIFICATION

"REGULAR" FINISH

This is the smooth-to-the-touch finish of most average quality parts. It provides satisfactory operation *most* of the time, but its less-than-perfect finish at *critical* working points can cause you costly trouble!

ROUGH EDGES CAUSE "SECONDS"

Keep Your Production on a "Firsts" Only Basis

. . . by using Ives "Super-Precision Finish" flat stock replacement parts. Get the benefits of smooth trouble-free production . . . at no extra cost! Check the finish of your replacement parts today. Don't be satisfied with "regular finish" at critical working areas on the part . . . even a slightly rough finish can cause you "seconds" trouble! Insure your production profit . . . **specify Ives!**

IVES QUALITY AND CRAFTSMANSHIP

. . . tell the full story of our unique "Super-Precision" finish. Superior Ives tools and dies, combined with the skilled know-how of America's finest metal craftsmen, mean quality performance for you!

Make your own comparison test by actual physical inspection testing of Ives parts versus those you are currently using. Simply send us several samples of your present sinkers or other flat stock, plus their corresponding trade numbers. By return mail, we will send you corresponding Ives samples with "Super-Precision" finish.

MAKE YOUR OWN COMPARISON TEST

(CUT OUT AND MAIL)

Visit the IVES Exhibit
45th KNITTING ARTS EXHIBITION
Atlantic City, N.J. - April 24 to 28

LOYAL T. IVES COMPANY, INC.

YES, I WANT TO COMPARE IVES "SUPER-PRECISION" FINISH

(Please Tape Your Samples Here)

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

PHONE: CHarter 9-0396-7

THE LOYAL T. IVES COMPANY, INC.
NEW BRUNSWICK, N.J.

CIRCLE 99 ON READER SERVICE CARD 99

Testing and Inspecting Equipment

Cobert Associates, Joseph C. 1002
Hosiery tester with special foot assembly*

Fabrionics Corp. 112
Warp-yarn monitor, defect counter*

Foster Machine Co. 43
Yarn inspector

Hudson Automatic Machine & Tool Co. 465
Projector - comparator - microscope combination*, quick-developing photo attachment*

International Textile Machine Co. 819
Hosiery-inspection machines, hosiery-pairing computer*

Marvel Specialty Co. 308
Course counter for hosiery, half-hose inspecting machine

Pernick Co., Inc., Joseph 805
Measuring and examining machine

Southern Textile Machinery Co. 53
Inspection machine for seamless and full-fashioned hosiery

Stanford Marley Distributing Co., Inc. 164
Mending machine*, mending iron*

Thread — Sewing

American Thread Co. 519

Atwater Throwing Co. 627
Nylon, Dacron

Cotton Yarns, Inc. 126

Liberty Throwing Co., Inc. 728
Elastic threads*

Standard-Coosa-Thatcher Co. 541

Synthread Div., Mason Silk, Inc. 1028
Nylon*, Dacron*

Threads, Inc. 935

Transfer Machines

International Textile Machine Co. 819
Seamless and full-fashioned hosiery*

Scott & Williams, Inc. 561
Looper

Southern Textile Machinery Co. 53
Looper

Twisters and Accessories

Fletcher Industries 601
20-spindle twister*, 22-spindle twister*

Herr Mfg. Co., Inc. 363
Flyers for uptwisters

Leesona Corp. 547
Ring twister*

Warping Equipment

Cocker Machine & Foundry Co. 47
Tricot warper*, accumulator rolls*, creels

Hayes Industries, Inc. 4
Tricot spools

Mayer Textile Machine Corp. 714
Tricot warpers*

* New since Knitting Arts Show, 1959

Winding and Spooling Machines

Atkinson, Haeserick & Co., Inc. 1009
Automatic winder*, rubber-covering machine*

Barber-Colman Co. 31
Automatic spooler

Fletcher Industries 601

Yarn Conditioners

Industrial Dryer Corp. 132

Yarns — Blends

Franklin Process Co. 741

Aberfoyle Mfg. Co. 325
Dacron and cotton, Kodel and cotton, Zefran and linen*

Cannon Mills, Inc. 201

Celanese Corp. of America 70

Dixie Mercerizing Co. 501
Creslan blends

Globe Dye Works, Co. 806

Latta, Currier Co., Inc. 66
Lamb's wool and Orlon

Meyers & Co., Inc., Clarence L. 533
Dacron and cotton, nylon and cotton

Street Co., John F. 818

U. S. Rubber Co., Textile Div. 525

Yarns — Cotton

Aberfoyle Mfg. Co. 325

American & Efird Mills, Inc. 625

American Thread Co. 519

Brant Yarns, Inc. 108

Cannon Mills, Inc. 201

Comer-Avondale Mills 333

Cotton Yarns, Inc. 126

Dixie Mercerizing Co. 501

Franklin Process Co. 741

Globe Dye Works Co. 806

Highland Cotton Mills, Inc. 413

Johnston Mills Co. 706

Jordan Mills 613

Klumpp Co., Joseph 414

Latta, Currier Co., Inc. 66

Muller & Co., L. P. 507

National Spinning Co., Inc. 1006

Piedmont Processing Co. 532

Sellers Mfg. Co. 60

Standard-Coosa-Thatcher Co. 541

Street Co., John F. 818

Yarns — Man-Made-Fiber

Aberfoyle Mfg. Co. 325
Orlon, nylon, Orlon Sayelle*

Allied Chemical Corp. 219

American & Efird Mills, Inc. 625
Orlon Sayelle

American Enka Corp. 86
Nylon

American Viscose Corp. 62
Avron, Avril*, Avlin, Tyrex

Atwater Throwing Co. 627
Nylon, Dacron

Caron Spinning Co. 514

Celanese Corp. of America 70

Central Yarn & Dyeing Co. 610
Package-dyed Orlon

Chemstrand Corp. 921
Acrilan, Acrilan 16

Comer-Avondale Mills 333

Courtaulds (Ala.), Inc. 1004

Dixie Mercerizing Co. 501
Spun Orlon

du Pont de Nemours & Co., Inc., E. I. 301
Orlon

Franklin Process Co. 741
Spun nylon, Acrilan, Orlon, Creslan

Globe Dye Works Co. 806
Orlon Sayelle, Arnel

Jordan Mills 613

Klumpp Co., Joseph 414

Latta, Currier Co., Inc. 66

Meyers & Co., Inc., Clarence L. 533
Nylon

Muller & Co., L. P. 507
Fiber glass

National Spinning Co., Inc. 1006

Pharr Worsted Mills, Inc. 49

Rhodia, Inc. 205
Rhovyl

Street Co., John F. 818

Union Carbide Chemicals Co. 719
Dynel

U. S. Rubber Co., Textile Div. 525
Spandex yarns*, spun acrylic yarns

Yarns — Textured or Bulky

Allied Chemical Corp. 219

American & Efird Mills, Inc. 625
Ban-Lon

American Enka Corp.
Ban-Lon

Atwater Throwing Co. 627
Fluflon, Agilon, Taslan, Hytor

Bancroft & Sons Co., Joseph 115
Ban-Lon

Brant Yarns, Inc. 108
Nylon

Franklin Process Co. 741
Textralized nylon

Latta, Currier Co., Inc. 66
Ban-Lon

Meyers & Co., Inc., Clarence L. 533
Helanca

National Spinning Co., Inc. 1006

U. S. Rubber Co., Textile Div. 525
Turbo acrylic yarns

Yarns — Wool or Worsted

Aberfoyle Mfg. Co. 325

American & Efird Mills, Inc. 625

Caron Spinning Co. 514

Central Yarn & Dyeing Co. 610
Package-dyed wools

Franklin Process Co. 741

Globe Dye Works Co. 806

Latta, Currier Co., Inc. 66
Orlon, Acrilan

National Spinning Co., Inc. 1006

Street Co., John F. 818

"No more tight ends in our warps"

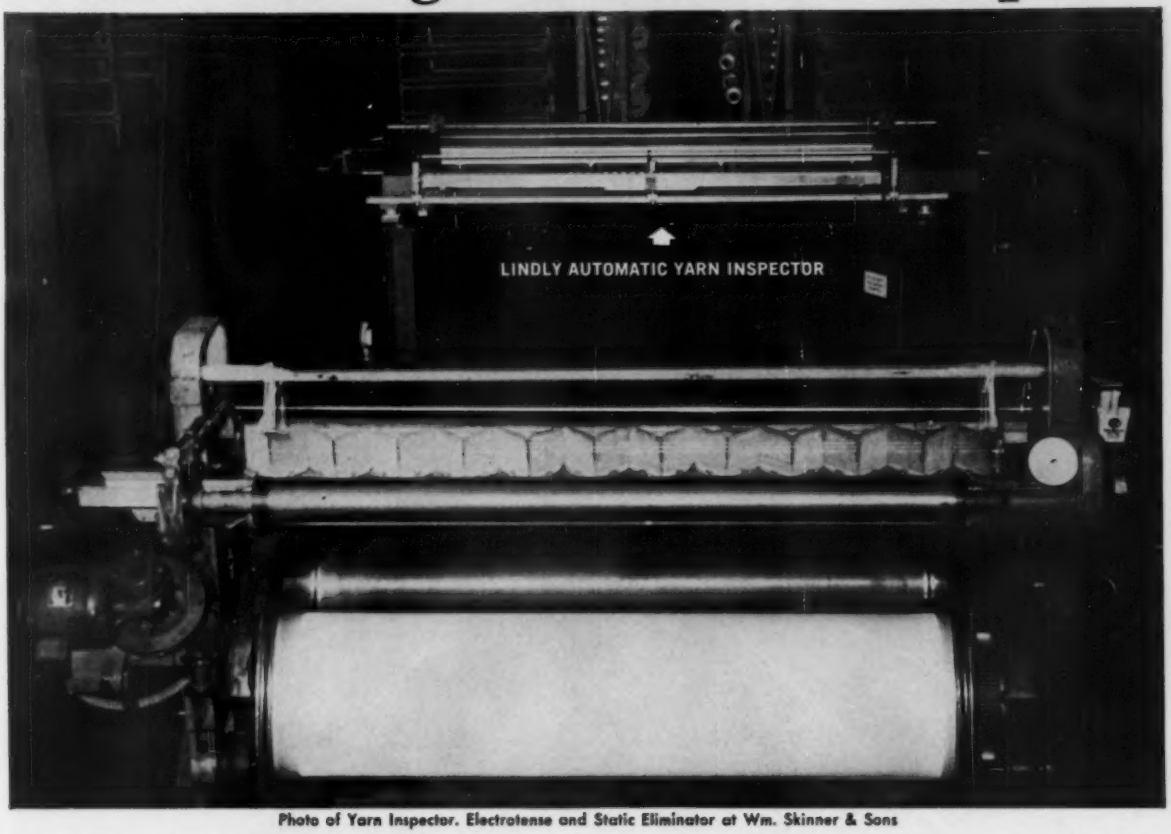
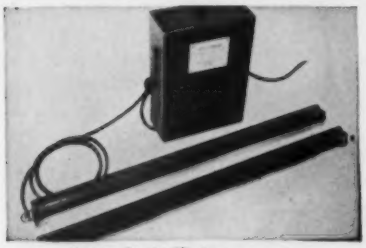


Photo of Yarn Inspector, Electrotense and Static Eliminator at Wm. Skinner & Sons

The LINDLY Electronic Triumvirate Gets the Credit

YARN INSPECTOR – ELECTROTENSE – STATIC ELIMINATOR

Closeup of Electrotense in creel.



Lance Static Eliminator — not visible in installation photo.

When we asked William Skinner & Sons, Holyoke, Mass. for a report on their installation of a Lindly Automatic Warp Yarn Inspector, the Lindy Electrotense in their creel and a Lindy Static Eliminator, their answer was prompt and enthusiastic: "No more tight ends in our warps."

However, when we asked them to go back temporarily to warping without the Lindly controls, so we could get some comparative "before" data, they flatly refused. "Why should we go through that again, when we don't have to?" they asked, and we can't blame them.

Since Skinner didn't need comparative data to prove the value of the Lindly Electronic Triumvirate, we doubt if you would either. So why not try an installation? Here's what the triumvirate is and does:

THE LINDLY AUTOMATIC YARN INSPECTOR is a high-speed, ultra sensitive photo-electric instrument for detecting yarn defects in warps, such as broken filaments, strip-backs and fluff balls. It can be made to operate a counter, a signalling device, or to actuate a machine stop switch — singly or in combination for any degree of imperfection.

THE LINDLY ELECTROTENSE for warp creels, winders, twisters, knitting machines, etc. provides completely uniform tension for any number of ends and the tension for all ends can be varied by turning only **one** dial. It consists of two conventional discs with an electromagnetic coil beneath. The lower disc is of non-magnetic brass, while the upper disc is of magnetic iron. When the coil is energized through a central electronic control, the upper disc is attracted downward, pressing the yarn between it and the lower disc in any degree desired. The pressure is pulsating, which prevents backup of twist and helps keep the tension discs clean and free turning.

LANCE STATIC ELIMINATOR, made in a variety of models, has a textile application wherever static electricity is a problem. It carries a high voltage discharge from pointed electrodes into the air, causing the fibre to be surrounded by ionized air, which serves to discharge the static electricity accumulated all around the surface of the fibre. Whereas the voltage is high enough to ionize effectively the air, it cannot harm the operator, who accidentally comes in contact with the electrodes.

See Lindly Electronic Products at Foster Booth 43—Knitting Arts Exhibition.

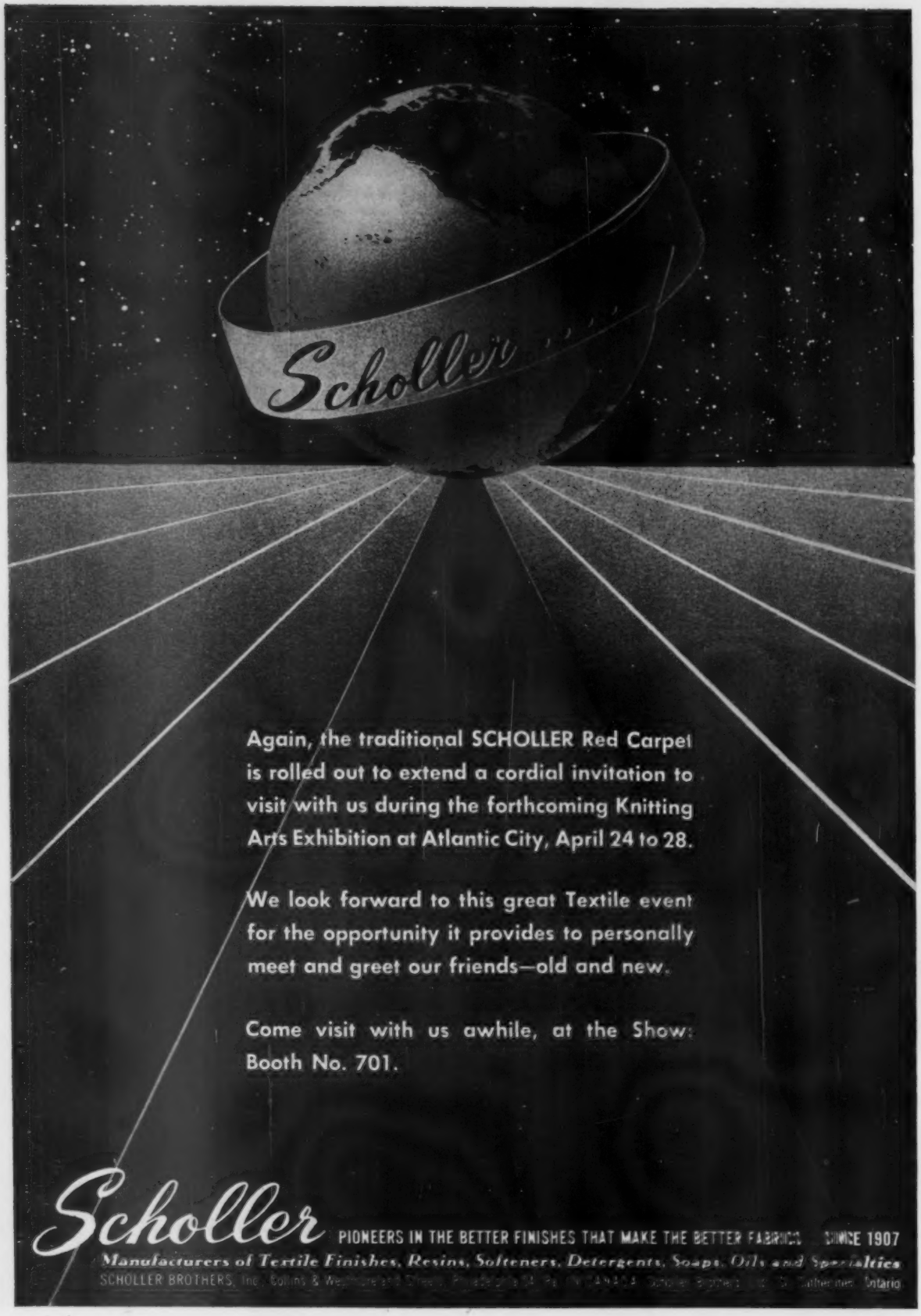
FOSTER MACHINE COMPANY

ELECTRONIC SALES DIVISION, DEPARTMENT TW-4

Westfield, Massachusetts, U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C.

468-0



Again, the traditional SCHOLLER Red Carpet is rolled out to extend a cordial invitation to visit with us during the forthcoming Knitting Arts Exhibition at Atlantic City, April 24 to 28.

We look forward to this great Textile event for the opportunity it provides to personally meet and greet our friends—old and new.

Come visit with us awhile, at the Show: Booth No. 701.

Scholler PIONEERS IN THE BETTER FINISHES THAT MAKE THE BETTER FABRICS. SINCE 1907

Manufacturers of Textile Finishes, Resins, Softeners, Detergents, Soaps, Oils and Specialties

SCHOLLER BROTHERS, Inc. Collins & Weston Streets Providence 24, R.I. In Canada: Scholler Brothers (Canada) Ltd. Fonthill, Ontario

TEXTILE WORLD
Vol. 111, No. 4
April 1961

CHEMICAL TREATMENT AND FINISHING

IN THIS SECTION

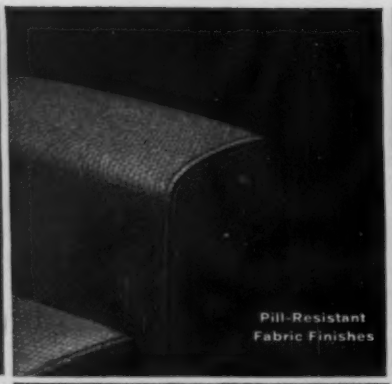
News of the Month in Textile Chemicals 107

What's New in Dyes and Chemicals 110

What You Should Know About Vat Dyeing Today—Part 2: The second installment in this important new series brings you up to date on vat-dyeing stock and top—cotton, rayon, wool, and silk. Written by the late O. W. Clark of American Cyanamid Co., this series—and this month's installment—provides complete and authoritative data 114

Dye Plant Modernization Pays Off 3 Ways—This company is enjoying 40% greater efficiency, twice as much capacity, and better working conditions as a result of its carefully planned modernization 120

Bonding Non-Woven Ribbons and Tapes


Pill-Resistant Fabric Finishes

Auxiliary Binder, Primary Binder or Anti-Crock Agent for Printed Fabrics

Scrim Laminate Adhesive

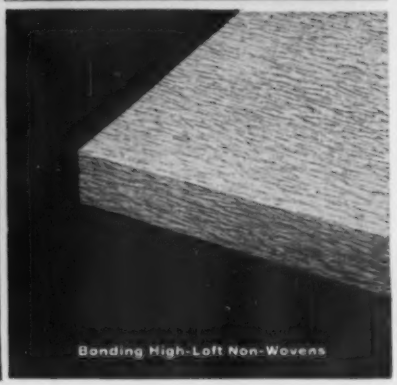
Clear Carpet Backing Material

Backing for Pile Fabrics

Anchor Coatings for Fabrics

NEW WAYS

the textile industry is using RHOPLEX acrylic resins to improve product quality


Bonding High-Loft Non-Wovens

It seems there's no end to practical uses for RHOPLEX® acrylic resins. Here's why they can do so many jobs so well: 1. Films of RHOPLEX resins are water-clear, do not discolor with age or exposure to light. 2. They are solvent-free—safe, easy-handling aqueous dispersions. 3. They have good adhesion, excellent bonding power, with excellent adhesion to a variety of fibers. 4. RHOPLEX finishes and backings withstand washing and dry-cleaning, do not stiffen with age. Good processing characteristics, positive product benefits—these are the advantages RHOPLEX resins offer you. Write to Textile Chemicals Department for complete technical information on these versatile materials.

ROHM & HAAS

PHILADELPHIA 5, PA.

RHOPLEX

Cottons to Crinolines . . .

CELANESE PVAc EMULSIONS ADD TO FABRIC QUALITY

Celanese polyvinyl acetate emulsions can be formulated to give just the handle and finish you need. Woven fabrics varying in weight from percale to denim or heavy twill can be made more durable . . . tensile strength and wrinkle-recovery improved . . . stiffness controlled as desired.

Ask for Bulletin NP 28, "Textile Finishing with Celanese Acetate Emulsions." It describes properties, applications, typical formulations and processing procedures.

Celanese Chemical Company, a Division of Celanese Corporation of America,
180 Madison Avenue, New York 16, N.Y.

Celanese®

Canadian Affiliate: Canadian Chemical Company Limited, Montreal, Toronto, Vancouver
Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16.

Celanese CHEMICALS

A symbol for textile processing...

DIAMOND CRYSTAL SALT

Diamond Crystal C.M.F. Type Salt truly offers you a "unique margin of difference". Unlike ordinary granulated or cube salt, harmful calcium and magnesium have been removed resulting in a product which consistently analyzes 99.95% Sodium Chloride. This margin of difference will carry through to your finished product . . . true colors and uniform dyeing, fewer rejects, high profits!

If you use rock salt, you will readily notice the "difference" in Diamond Crystal Louisiana Rock Salt (from Jefferson Island) which is 99% pure at its source. A long time favorite in textile processing, this quality product will serve you well.

Learn exactly how these features can benefit you. For immediate service and consultation on all your salt requirements, call or write the nearest Diamond Crystal sales office.

Diamond Crystal Salt Company

ST. CLAIR, MICHIGAN

PLANTS: AKRON, OHIO; JEFFERSON ISLAND, LA.; ST. CLAIR, MICH.
SALES OFFICES: AKRON • ATLANTA • BOSTON • CHARLOTTE • CHICAGO
DETROIT • LOUISVILLE • MINNEAPOLIS • NEW ORLEANS • NEW YORK

News of the Month in . . .

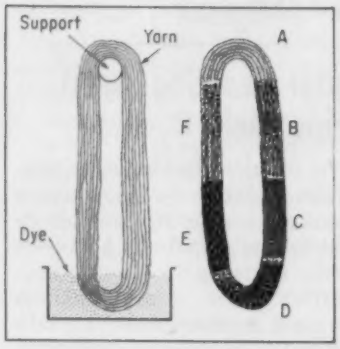
Textile Chemicals

By ROBERT W. PINAULT, Associate Editor, TEXTILE WORLD

Scotch Firm Revives Space Dyeing Technique for Multicolor Yarns

The Scottish firm of Colourcraft Ltd. (Galashields, Scotland) is currently promoting a revived method of dyeing woolen yarns in a multitude of colors.

Trick is to immerse a section of a skein of yarn in the dyebath until that portion is dyed. Then the skein is rotated to expose a fresh area, and this portion is dyed with another color. The process is repeated until each skein has five or six differently colored sections. The dyed yarns are wound and/or plied at random so that after weaving the fabric boasts 30 to 40 colors.



Production includes saxonys and cheviots in skirtings, coats, and costume cloths.

More lines possibly will be added later. The fabrics will be branded Seurat cloths, after the French painter of that name.

Polyethylene Amines Play Stabilizing Role in Improving U-F Resins

Now you can use organic amines rather than ammonia as a stabilizing agent in simple urea-formaldehyde (U-F) resins.

In the past, ammonia has been used to manufacture U-F resins, mainly because it is a better stabilizer than caustic soda, hexamine, or ethanolamine. But ammonia combines with formaldehyde, and ultimately the product may produce fishy odors in heated fabric.

Experiments with diethylene triamine, triethylene tetramine, or tetraethylene pentamine as replacements for ammonia have showed that these amines give good stability but that washfastness of the resins is poor if you let the amine content get too high.

But you can get one to two days' stability of the U-F resin at room temperature with 2 to 4% of diethylene triamine, or 1 to 3% triethylene tetramine, based on the weight of the urea.

A typical formulation includes mixing 200 parts of neutral 40% formaldehyde, 100 parts of urea, and 4 parts of a 50% solution of diethylene triamine. After standing overnight, dilute 30 parts of the mixture and 10 parts of a 12.7% aqueous solution of magnesium dihydrogen phosphate to 100 parts with water.

Viscose fabric treated with this resin and then dried at 60 C., cured at 140 C. for 3 minutes, and then afterwashed has good crease resistance and is free of odor. The finish has good wash-resistance.

Sulfonated Oils May Replace Carriers

High concentrations of sulfonated castor or olive oil aid absorption of vat and disperse colors from padding liquors or printing pastes, according to a patent issued to Cassella Farbwerke Mainkur A. G.

Carriers don't have much effect in helping vat dyes to color polyester fibers. But if you add at least 8% of a 50% solution of sulfonated castor oil to each liter of padding liquor or kilogram of print paste, you can make excellent vat dyeings.

To fix the color, heat-treat the padded or printed goods at 190 to 220 C. for 30 to 120 seconds after the dye has been applied. Next comes an afterwash in a weak caustic and hydro bath containing 1 gram per liter of polyvinyl pyrrolidone. Then comes rinsing, and the soaping to bring out the vat shade.

You can substitute other wetting agents such as alkyl sulfonates, alkyl naphthalene sulfonates, and alkylphenyl polyglycol ethers for sulfonated oils.

Agitate Wash Liquor To Improve Effect

Many open-width washing operations use sprays at the pad nips to increase the washing action. Trouble is, sprays tend to clog up with lint and other foreign matter and become useless without frequent cleaning.

You can get improved washing by mounting pulsating devices near the surface of the liquor in the wash box. The agitation set up is approximately at right angles to cloth travel, thus drives the wash liquor through the goods rather than letting it slide off.

Common Resins Boost Durability Of Fluorocarbon-Based Finishes

Commonly used resins greatly increase the durability of stain-repellent effects of the fluorocarbon-based repellents available today. Products based on urea, melamine, glyoxal, and polyfunctional isocyanates are all helpful. The crosslinking agents such as dimethylolethyl tetra-s-triazone are especially useful.

What happens is that the resins, by increasing the hydrophobicity of cellulose fibers, prevent swelling when the fabrics are washed. Result is that the fragile films of fluorocarbon materials are not broken and stain repellency is retained through numerous washings.

Here is a typical procedure:

Pad goods in a solution that contains:

- 6.25 parts dimethylol ethyl tetra-s-triazone
- 1.2 parts zinc nitrate (catalyst)
- 4.1 parts Scotchgard FX-139 (a fluoroalkyl ester of polyacrylic acid)

Water to make 100 parts

Pickup is 80%. The goods are dried, cured at 150 C. for five minutes.

Comparison between fabrics treated with the fluorocarbon alone and in combination with the triazone shows nearly double the initial repellency to both oil- and water-borne stains for the combination.

You can use simple urea-formaldehyde resins to get the same effect. Example:

Pad on a liquor carrying:

- 3.9 parts Scotchgard FX-139
- 0.035 parts wetting agent
- 57.5 parts of a 31% solution of urea-formaldehyde precondensate, ratio 1:6

Water to make 100 parts

Dry the goods, and cure at 150 C. for five minutes.

This formula improves resistance to drycleaning.

A two-step process (follow the fluorocarbon treatment by padding the fabric in a solvent solution of meta toluylene di-isocyanate, followed by a second drying and curing) improves laundering resistance.

Buffered Chlorite Systems Cut Down on Corrosion

Corrosion of equipment and other troubles from free chlorine dioxide vapors are much reduced if you buffer the chlorite bleaching bath with certain amides.

Farbenfabriken Bayer A. G., Germany, has patented the use of amides in this connection, and mentions acetamide, chloracetamide, aminoacetic acid, aminoethane sulfuric acid, and di-isopropyl carbodiimide as useful in this respect.

For example, you can pad desized cotton goods in a liquor that contains 13 grams per liter of 80% sodium chlorite, 4 gp. of a surfactant based on a petroleum sulfonate, 0.7 gpl. of monochloracetamide, and 1 gpl. of ammonium sulfate or phosphate.

Liquor pickup should be 100%. Then you hold the goods at 95 to 98 C. for 45 minutes and rinse well.

Organic Phosphonate Provides Flameproofing

Acetate and triacetate fabrics acquire good flameproof finishes if you treat them with complex organic phosphates such as bis-2-chloroethyl aminophosphonate. Example: Saturate an acetate fabric in a 6 to 10% solution of the chemical, squeeze out excess, and dry at 70 to 80 C. Phosphorous content should be 1 to 1.7% to get good flameproofing.

You can flameproof wool-triacetate blends in a similar way. But you need a 20% solution of the phosphonate and the blend should contain 3.8% phosphorous after finishing. Courtaulds Ltd. holds British Patent 858,582 on process.

Coming Soon; Solvent Degreasing of Cotton

Continuous degreasing of gray cotton goods now appears practicable, according to reports from Imperial Chemical Industries Ltd. Needed to produce 100 yards per minute is a solvent-treating chamber that carries at least 50 yards of goods to give a 30-sec. immersion. A wash-off in boiling water follows to remove entrapped solvent.

Boiling trichloroethylene is the solvent used, and 98% is recovered in the pilot system now in use.

The treatment cuts the wax content of cotton to between 0.10 and 0.14%. (Normally, cotton contains 0.6 to 0.8% wax.)

Better Reducing Agent Helps Skein Dyeing

Vat or sulfur dyes are more manageable in skein-dyeing processes if you use a reducing agent developed by Badische Anilin Und Soda Fabrik, Germany.

British Patent 855,494 discloses that alkali-metal or ammonium salts of a linear or branched hydroxyalkylsulfinic acid with 2 to 4 carbon atoms is one type of reducing agent that works well. Another is a derivative of ethylene diamine that contains the hydroxyalkylsulfinic acid group.

These reducing agents have no effect on vat dyes at up to 50 C., but at temperatures of 50 to 60 C. they act very rapidly.

A working formula includes:

- 4 parts vat dye
- 18 parts caustic soda
- 6 parts potassium salt of hydroxy-isopropanesulfinic acid
- 972 parts water

Skeins are worked in a 1-to-30 bath at 25 to 30 C. for 20 minutes. Then the temperature is raised to 85 to 90 C. and maintained for 30 minutes. As the reducing agent goes to work in the 50 to 60 C. range, the leuco compound is absorbed evenly, and there is no precipitation of dye at the higher temperature.

Two-Phase Dye Liquors Improve Wool Dyeing By Banning Uneven Effects

The skittery and uneven effects you are apt to get in the continuous dyeing of wool and wool unions are eliminated in a method developed by Ciba Ltd., Switzerland.

Process is based on the use of a surfactant that forms aqueous two-phase systems in which both isotropic liquid phases consist mainly of water. Systems of this type are known as coacervation systems.

One phase usually contains the bulk of the surfactant material, and is known as the coacervate. It is this phase that has high dissolving power for dyestuffs. Acid dyes; 1:1 and 1:2 metal-complex dyes; reactive, chrome, and basic dyes; vat pigments, leuco vats, and disperse dyes are all dissolved almost exclusively in the coacervate.

When you pad on dye liquors made up with the particular surfactant, the dye remains pretty well in the coacervate phase of the dye liquor until the goods are exposed to damp heat. Then the coacervate, which has formed a homogeneous layer around each fiber, releases its dye content slowly and evenly to penetrate each fiber completely.

Here's the three-step process:

1. Pad or print on the coacervation system.
2. Steam 10 to 30 minutes at 100 C. in saturated steam or bath and keep at 60 to 100 C. in a chamber such as the Pad-Roll.
3. Wash off unfixed dye.

Dyeings are level, well penetrated, and reproducible from batch to batch.

Recommended materials include wool slubbing, piece goods, wool cellulose unions, wool-nylon blends, and wool-polyester blends (in pale to medium shades).

Ciba calls the process Cibaphasol and has applied for patents.

Brightener Inhibitor Helps Retain Shade

Goods dyed to pale shades often appear to fade after several launderings, even when they are vat dyed. Reason for this is today's inclusion of optical brighteners in most laundering compounds. Brighteners tend to build up in fabrics, and their effect is to make pale shades appear even lighter in color.

One way to overcome this trouble is to include in the finishing formula a dye fixative based on a cyanamide-formaldehyde compound. About 1% of such a product, based on the weight of the goods, is applied to the fabric at 70 C. for 20 minutes and then dried in.

Film-Formers Provide Drip-Dry Finish

You can give cotton and rayon fabrics good wet crease resistance and dimensional stability by a method developed by The Bleachers' Association, Manchester, England (British Patent 846,287). An acid solution (pH 2.4 or less) of polyvinyl alcohol, dimethylol ethylene urea, and a water-soluble polyester carrying free acidic groups is the treating medium. Goods are impregnated with the mixture, dried, and then cured at 130 C. for three minutes.

You make up the treating bath by heating 10 parts of polyvinyl alcohol to 90 C. in 80 parts of water. Cool this solution to 25 C. and add 21 parts of a commercial tetramethylol acetylene diurea. Also include 5 parts of 40% formaldehyde solution and 2 parts of the soluble polyester dissolved in 20 parts of water.

The polyester is made by reacting triethylene glycol and succinic acid in a molecular ratio of 1 to 2 for 2 hours in a stainless-steel vessel at 170 C. and finally at 190 C., until the acid value reaches 250.

Did You Know

. . . that variation in density of yarn packages in itself really doen't affect dyeing results very much? Tests made at the Fiber Research Institute (Delft, Holland) show that large variations in air permeability did not give unlevel dyeings in modern equipment. All other things being equal, only extremely hard packages give trouble, and these aren't likely to occur in the normal winding operations.

■

. . . that lithium chloride is a good antistatic agent? If applied to polyamide-fiber fabrics, it prevents static build-up while garments are being worn and thus reduces the soiling that is accelerated by static charges in the fabric.

■

. . . that some reactive dyes, when used on wool, reduce the power of the fiber to contract and take a set after dyeing? Some of the yellow and blue dyes of the Procion and Cibacron series, applied from an acid dyebath, produce this effect. Red dyes aren't so likely to do so.

■

. . . that developed blacks on triacetate goods are best diazotized after developing? Apply your base first, then in a fresh bath work the goods in the usual amount of beta-hydroxynaphthoic acid at pH 3.5. Rinse and diazotize with twice the normal amount of hydrochloric acid and sodium nitrite as you'd use for acetate goods. A final cleaning with weak hydro or detergent is advisable.

■

. . . that pigments insoluble in the melt are most suitable for coloring polyamide fibers? Experience has shown that if the pigment is soluble, washfastness is seriously impaired. It is better to have the pigment dispersed as discrete particles rather than in molecular form.

What's New In Dyes and Chemicals

Premetalized Dye

Supralan Black GGL-CF . . . produces clean black and gray shades on wool, silk, nylon, and other man-made fibers such as Creslan, Dynel, Verel, and Zefran. A companion color, Supralan Black NB-CF, is similar in characteristics but is less green in cast. General Dyestuff Co. **(Circle D-1 on Reader-Service Card)**

Wash-and-Wear Finish

Ganalok . . . described as a nonresinous, crosslinking material, is offered for producing durable crease-resistant finishes on cotton fabrics. The finish leaves goods with a soft hand and does not tend to turn gray after several launderings. It is bleach resistant and doesn't develop any odor. Goods treated with it may be spun and tumble-dried and still retain a smooth surface. General Dyestuff Co. **(Circle D-2 on Reader-Service Card)**

Fast Color Bases

Orange RD Base, Bordeaux BDC Base, and **Black K Base** . . . are offered as fast color bases previously available only as fast color salts.

The Bordeaux BDC and Orange RD Bases produce bright, economical shades that have excellent lightfastness when coupled with Naphtanilides. The Black K Base is recommended for navies and bluish blacks to get lightfastness.

The bases are recommended for yarn or piece dyeing on cellulosic fibers and some man-made fibers. All have good resistance to chlorine, mercerizing, and hot pressing. Crescent Chemical Co., Inc. **(Circle D-3 on Reader-Service Card)**

Vat Dyes

Ponsol Yellow PGN Double Paste . . . is an improved anthraquinone-type vat paste that produces attractive reddish-yellow shades of good fastness. The dye is also useful as a shading color in package dyeing, beam dyeing, and piece goods. Over-all fastness properties are good.

Ponsol Golden Orange 3GN Paste . . . produces bright golden-orange shades on cellulosic fibers by all types of dyeing or printing processes. The color has good over-all fastness properties, is level dyeing, and retains its fastness when subjected to resin finishing.

Ponsol Brown WAB Paste . . . is an economical anthraquinone brown dye suitable for almost all types of vat-dye application. It is recommended that dyeing temperatures for this color not exceed 120 F. if weakening and dulling of the shade are to be avoided.

The dye produces speck-free dyeings and can be used by the vat-acid procedure. It can be printed in light shades.

Ponsol Brilliant Violet 4RNP 80% Paste . . . is a specially dispersed version of Ponsol Brilliant Violet 4RN Paste. It is recommended for package dyeing. It can also be used for piece-goods dyeing by the pad-steam continuous process or by other methods. The high degree of dispersion aids in penetrating tightly woven goods. E. I. du Pont de Nemours & Co., Inc. **(Circle D-4 on Reader-Service Card)**

Nonmigrating Vats

Carbanthrene . . . is a series of vat dyes now offered in a form that reduces the tendency of vat dyes to migrate when they are applied in pigment form. The line is offered in a comprehensive range of shades. Allied Chemical Corp. **(Circle D-5 on Reader-Service Card)**

Finish Stabilizers

Hy-Ad and **Hy-Ad S** . . . are offered as extenders and stabilizers for oil-repellent fluorochemicals in water and solvent applications.

Hy-Ad is used with FC-208 water system, and Hy-Ad S is recommended for solvent systems.

The stabilizers increase the tolerance of fluorochemical-based emulsions for other adjuvants. Improved water and oil repellency and greater durability to laundering and drycleaning are claimed for finishes that include these products.

The products lend hydrophobic properties to all textile fibers and can be used to reduce abrasion and improve crease-angle recovery in resin finishes. Arkansas Co., Inc. **(Circle D-6 on Reader-Service Card)**

Fugitive Tints

Tint-Out . . . brands a line of fugitive colors especially designed for identifying man-made fibers. The colors are perfectly water soluble and easily removed by normal dyehouse-processing methods. Dacron-cotton blends are among those stressed as easily tinted and cleaned up if these colors are used. Chemtel Corp. **(Circle D-7 on Reader-Service Card)**

Acid Dye

Nylanthrene Red 4RL . . . is a neutral-dyeing red designed to give bright shades on nylon. It supercedes Nylanthrene Red 2RWF and is standardized to the latter's tinctorial value.

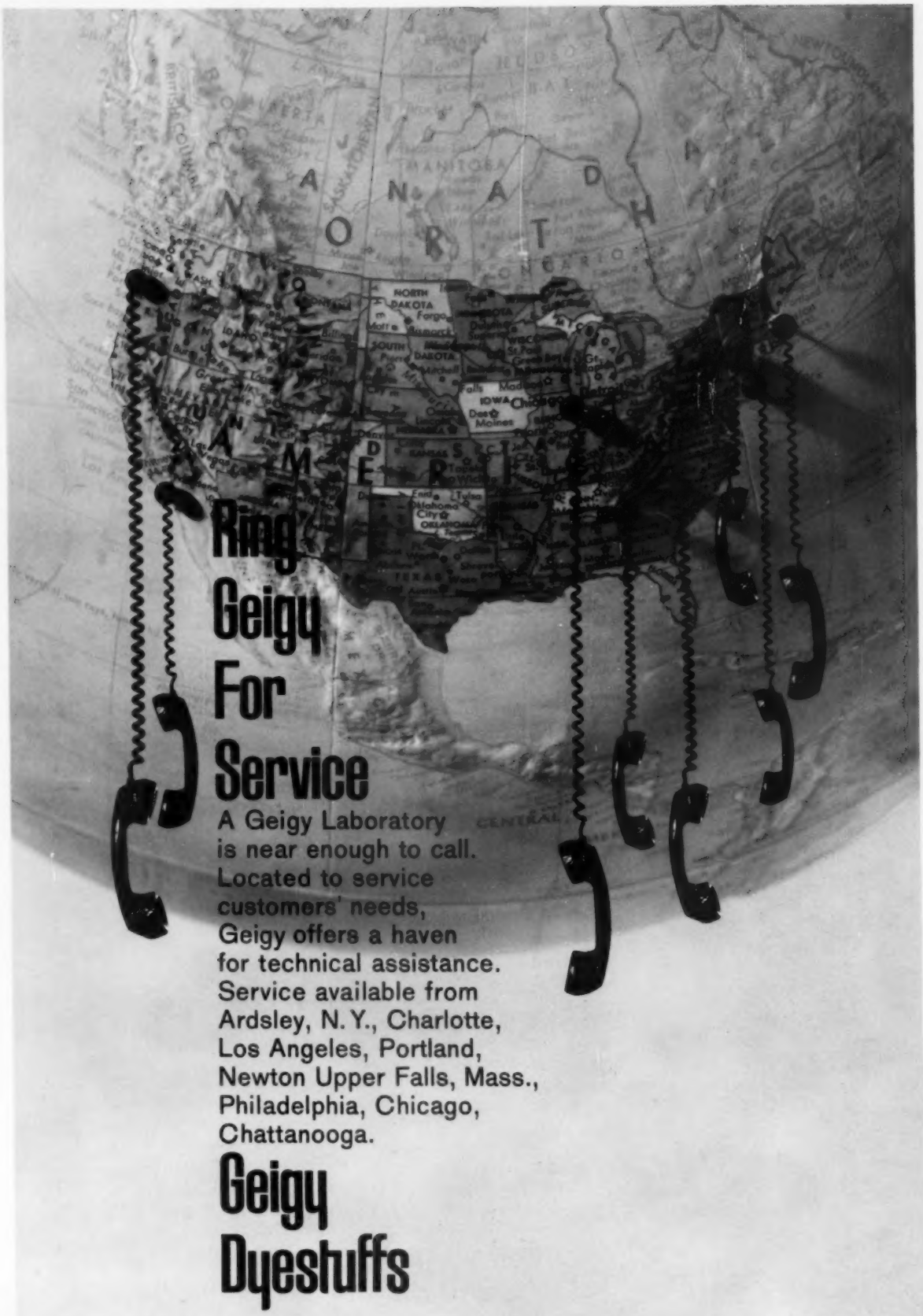
Lightfastness of the dye is reported to be superior to the previous counterpart. Althouse Chemical Co. **(Circle D-8 on Reader-Service Card)**

Sequestrants

Seqlene Fe-900 and **Seqlene Fe-1300** . . . are water solutions composed chiefly of sodium beta-glucoheptonate. The products are similar except in solids content. Seqlene Fe-900 is rated at 35% solids. Seqlene Fe-1300 is a 50% product.

The sequestrants are especially effective in highly alkaline solutions and will effectively chelate iron, calcium, magnesium, copper, nickel, manganese, cobalt, zinc, and silver.

A. E. Staley Mfg. Co. **(Circle D-9 on Reader-Service Card)**



Ring Geigy For Service

A Geigy Laboratory is near enough to call. Located to service customers' needs, Geigy offers a haven for technical assistance. Service available from Ardsley, N.Y., Charlotte, Los Angeles, Portland, Newton Upper Falls, Mass., Philadelphia, Chicago, Chattanooga.

Geigy Dyestuffs

A JACQUES WOLF Chemical for every processing need!

For any stage of textile processing, Jacques Wolf & Co. has a complete line of chemicals and specialties. Whatever your particular problem, we shall welcome the opportunity of submitting samples custom-formulated to meet your needs. Write for our catalog.

JACQUES WOLF & CO.
60 Park Place, Newark, N. J.

HYDROSULFITES

HYDROSULFITE AWC—($NaHSO_2CH_2O.2H_2O$)
For stripping and discharge printing.
HYDROSULFITE OF SODA—(Conc.) ($Na_2S_2O_4$)
For reduction of vat colors. Non-Dusting
HYDROSULPHITE B Z—($Zn(OH)HSO_2CH_2O$)
For stripping wool stock, shoddy, rags.
HYDROZIN®—($Zn(HSO_2CH_2O)_2$)
For stripping acetate dyes and discharge printing on acetate dyed grounds.
HYDROSULFITE QD—For rapid dissolving in continuous vat dyeing.

DE-SIZING

AMPROZYME®—For liquefaction of starches and proteins in de-sizing textiles.
DIASTAZYME®—Used as an economical de-sizing agent for starch-sized textiles.

SCOURING

ORATOL® L-48—A synthetic detergent with excellent penetrating and emulsifying properties.
BENSAPOL—A liquid detergent derived from Monopole Oil particularly useful for scouring wool.
LOUPOLE W-950—A penetrating detergent for use in scouring or boiling off.
PARNOL—Sodium Dodecyl Benzene Sulphonate.
SELLOGEN® GEL — A synthetic detergent used also in dyeing and as a wetting agent for all natural and synthetic fibre.
DETERGENT W-1750A—Has anionic and non-ionic properties; excellent for scouring nylon and dacron to remove throwster sizings; penetrates and lifts graphite streaks

DYEING

WETSIT™ CONC—A synthetic aromatic compound for wetting out in both the dyeing and scouring operations.
WETSIT NI—100% non-ionic wetting agent.
MONOPOLE® OIL—A highly concentrated, double sulphonated castor oil for a wide range of operations.
APASOL®—Particularly effective in the dispersion of acetate printing colors. A sulphonated ester with a high combined SO_3.
LOMAR® PW—Dispersing agent for pad dyed vat colors; also retardant in the dyebath.
SULPHONATED OILS—Castor, Cod, Sperm, Olive, Neatsfoot, Pine, Red, Teaseed, etc.

FINISHING

DILEINE® SERIES—An amino concentrate for the prevention of atmospheric gas fading on dyed acetate fibers.
MELEINE® SERIES—Complex organic nitrogenous compounds used on finishes to protect acetate dyed fabrics from atmospheric gas fading.
STATLESS—Paste for reducing static on all fibres.
CREAM SOFTENERS—In different strengths and varied degrees of alkalinity for a soft full hand to all types of fabrics.
LUPOMIN®—A series of cationic nitrogen compounds used for softening and finishing textiles.
CHAFE REMOVER W-545-T—A finishing oil for textiles, particularly silk fabrics, to remove chafe marks.
LUXAPOLE™ W-1054-B—A superior, sulphonated oil for finishing all fine fabrics.
OIL S-261C—A clear, amber oil used as a penetrator and softener for cotton cloth; aids in uniform shrinkage.
SOLUBLE WAX JB—A dispersed vegetable wax for full body and high lustre to cotton goods.
WEIGHTER FINISH M—For heavier body and better hand for all fabrics.

PRINTING

SUPERCLEAR™—Prepared from natural gums as a thickener for printing all types of textiles.
SUPERGUM™—A cold-water soluble gum.
PIGMENT WHITES—Dispersed suspension of white pigments with plasticizers for use on light grounds, or white discharge on dyed ground shades.
ACETATE OF CHROME—As a mordant in dyeing and printing mordant colors. Also for dyeing mineral shades.
TRAGACANTH—Gum solutions in various concentrations for extra clear, sharp prints when used with acid, direct or insoluble Azo dyestuffs.

OTHER SPECIALTIES

Mordants	Gums—Arabic, Karaya and Tragacanth
Defoamers	Fiber Lubricants
Sizes	Thickeners
Delustres	Wool Oils
Penetrants	Sulfonated Oils (various bases)
Weighting Finishes	

JACQUES WOLF & CO.
Chemicals NEWARK, N.J.
A subsidiary of Nopco Chemical Company

BE SURE . . . of quality
. . . of on-schedule deliveries
. . . of experienced service

PENNSALT TEXTILE CHEMICALS

Reduce costs and improve quality in your finishing operations by calling on Pennsalt Technical Service. An experienced representative will study your process from greige goods to finished product and provide you with reliable solutions to your textile finishing problems. Write Industrial Chemicals Division, PENNSALT CHEMICALS CORPORATION, Three Penn Center, Philadelphia 2, Pa.

Pennsalt Chemicals®
ESTABLISHED 1850

SEE OUR COMPLETE LISTING IN CHEMICAL MATERIALS CATALOG

INDUSTRIAL CHEMICALS DIVISION

SALES OFFICES:
ATLANTA • CHICAGO • DETROIT • NEW YORK • PHILADELPHIA
PITTSBURGH • ST. LOUIS • APPLETON • TACOMA • PORTLAND

INDUSTRIAL QUÍMICA PENNSALT, MEXICO CITY

CIRCLE 113 ON READER SERVICE CARD 113

A TEXTILE WORLD UPDATE

What You Should Know About

Here's Installment 2 of this important new refresher and up-dater series. It will give you today's best thinking (and procedures) for vat-dyeing stock and top, whatever the fibers may be— cotton, rayon, wool, and silk.

STOCK DYEING tomorrow (and in the years to come) may be quite different from what it is today. For example, development work may turn up a continuous-dyeing method using either modified Williams units, equipped with mesh conveyor belts —or the Du Pont Flowstock method. Other unpublicized continuous methods also are being tried.

Today, however, stock dyeing with vat colors is a batch operation. Most stock-dyeing equipment designed primarily for cotton consists of a large kier with a perforated false bottom and with a cover that can be fastened tightly with bolts. A pipe in the kier cover leads to an expansion tank. A pump circulates liquor from the expansion tank to the bottom of the kier, thus forces the liquor up through the stock. A perforated plate, placed on top of the stock and chained down or held down by lugs, keeps the stock in place.

As far as dye application is concerned, you can most easily produce levelness and penetration in a machine that is often used in some foreign countries for stock dyeing. But this machine is rarely used in the United States because its cost is higher for a given dyeing capacity and because you can obtain passable results from cheaper machines. In this machine a basket with perforated walls holds the stock. Circulation is conducted, with periodic reversals of direction, horizontally through the stock, thus facilitating level dyeing.

An earlier type of machine (still found in some mills) has an open top and is less efficient in dye application than closed machines. Because there is no cover on the kier of this machine, the liquor overflows by gravity into the expansion tank and the pump circulation cannot be as vigorous as in the closed-kier machine. It is therefore difficult to secure a uniform penetration of a mass of stock and level dyeing.

Another type of machine is found in mills that usually process wool or hydrophobic fibers. It is somewhat similar in design to the machine just described, but the direction of flow is reversed. The liquor flows over the surface of the stock from the pump-delivery pipe, percolates down through the stock, and then flows to the pump-suction line. Level dyeing and good penetration are hard to obtain in this type of machine.

By the late O. W. CLARK
American Cyanamid Co.
New York City

STOCK DYEING: YES OR NO?

Advantage 1 of stock dyeing: You can blend any number of dyed batches to form a single lot that is larger and has better uniformity than you can get by dyeing at a later stage. Because non-uniform dyeings may be converted into a uniform shade by later manufacturing operations such as blending, carding, and spinning, dyers often pay very little attention to the selection of dyes on the basis of their level-dyeing properties. This way, they may use low-cost dye combinations that are not suitable for yarn dyeing or for some methods of cloth dyeing.

Advantage 2: You get excellent pentration of dye into the individual fibers. (At this stage, fibers are free of the twist and tension imparted to them at later stages of manufacture.)

Advantage 3: You can blend various dyed fibers to produce yarn in a solid shade or in a multicolored shade. But even though you can blend unlevel stock to give level shades of yarn or fabric, this is the hard way to do it. Often you have to dye a special lot of stock to compensate for lots so unlevel that they will not produce the shade that you want. This type of processing is expensive. It is much better to try to get the lots as level as possible.

Disadvantages of stock dyeing: the need for large storage space for dyed stock, the presence of colored fly in yarn production, the lag between receipt of a dye order and delivery of the completed textile, and the 10 to 15% waste of expensive dyed fiber through the manufacturing steps.

Because of these disadvantages, stock dyeing of cotton has given way to beam and package dyeing, which today deliver dyeings that are level enough and uniform enough for most purposes where stock dyeing once was required.

Stock dyeing of the individual fibers separately is sometimes the only way to produce desired color effects in yarn and cloth containing mixed fibers.

DYEING COTTON STOCK

Today in the United States vat dyes are applied to cotton stock almost exclusively in pressure-circulating machines of the closed-kier type in fully integrated mills that dye a few shades in large volume.

Vat Dyeing Today—Part 2

Liquor ratios are 1:6 to 1:12, depending on machine design and the quality of cotton. Cotton of a low Micronaire rating packs more densely and can be more heavily loaded into a machine than cotton of a higher Micronaire rating.

If cotton has a very low Micronaire rating, you may have trouble getting an adequate rate of liquor flow—or you may get no flow at all. It's customary to process the bales of raw cotton through the opening and cleaning equipment and then load loose material uniformly and carefully into the kier, either manually or by conveyor pipelines.

If the distribution and density of the stock in the kier is not uniform, you will get channeling of the circulating dyebath and lightly dyed or white portions in the completed dyeing. This not only entails thorough subsequent blending, but you'll get a lighter shade from such a batch than from a uniformly dyed batch that is fed the same percentage of dye.

Always use soft, clean water in stock dyeing, because the mass of stock is an efficient filter and any local precipitation will interfere with the uniform flow of liquor. Any precipitate remaining in the stock may hinder its passage through later operations.

When you dye stock in circulating machines with bottom-to-top flow, do not drain the bath until the stock is ready for unloading. Why? Because removal of the water pressure allows the stock to settle and results in channeling when circulation resumes. Cotton stock is usually wet at 200 F. with water only, to remove entrapped air.

Inclusion of a wetting agent in this bath is likely to increase the tendency of the stock to pack too densely. An alkaline wetting bath tends to shrink the fibers and increase the resistance of the stock to the circulating liquor.

Often, stock is wet by percolating steam at low pressure through the load before the kier lid is closed. If you use the pigment method of vat dyeing, you can run the dye dispersion into the dry stock without a wetting operation that is normally required for vat-dyeing stock.

STOCK-DYED COTTON leaves kier. Cotton mass will be broken up, extracted centrifugally, then dried in a conveyor-type dryer.

TYPICAL PROCEDURES

Reduced method—In this method you reduce the dye in a stock vat. You "spring" or prime the dyebath with the portion of the total caustic soda and hydrosulfite that is required for dyeing but is not used in the stock vat, and you circulate the bath through the stock for a short period until entrapped air is removed. You add the stock vat in one or more portions to the circulating bath.

Keep the total concentration of caustic soda in the dyebath at a minimum. This way, you will preserve the natural physical properties of the stock and facilitate passage of the dyed stock through later manufacturing operations.

After you have obtained the desired shade, you will complete the dyeing operation by rinsing, oxidation, and aftertreatment. For aftertreatment, use synthetic detergents instead of soap because the detergents remove less of the natural cotton oils and waxes. Often the last rinsing bath contains ½ to 1 ounce of common salt per gallon. The lubricating effect of synthetic detergents and the increased hygroscopicity imparted to the stock by salt combine to make later manufacturing operations easier.

Example:

SHADE . . . Light yellow

MATERIAL . . . 1,000 pounds of cotton stock

MACHINE . . . Pressure-circulating. Liquor volume, 1,000 gallons. Liquor ratio, 1:8.

Procedure:

1. Wet stock with soft water at

200 F., then cool to 120 F. by adding cold water.

2. Add:

Caustic soda—about ¼ ounce per gallon (15 lb. = 1½%)

Hydrosulfite—about ¼ ounce per gallon (15 lb. = 1½%)

3. Add the stock vat prepared as follows:

Anthraquinonoid-type vat yellow (20 lb. = 2%)

Caustic soda (5 lb. = ½%)

Hydrosulfite (5 lb. = ½%)

Soft water (20 gallons)

4. Reduce for 10 minutes at 140 F.

5. Circulate for 10 minutes.

6. Add:

Common salt—about ½ ounce per gallon, 3% (30 lb.)

7. Circulate 10 minutes.

8. Add:

Common salt—about 1 ounce per gallon, 6% (60 lb.)

9. Circulate 10 minutes.

10. Add:

Common salt—about 2 ounces, per gallon, 12% (120 lb.)

11. Circulate 15 minutes.

12. Turn on cold water and rinse, overflowing, until pH drops below 9.0.

13. Add, in order:

Hydrogen peroxide (130 volume) —0.1 ounce, per gallon (6 pounds, 4 ounces).

Acetic acid (56%)—0.15 ounce per gallon (9 pounds, 6 ounces).

14. Circulate, heat to 180 F.

15. Add:

Wetting agent—0.05 ounce per gallon (3 pounds).

16. Circulate 15 minutes. Drain, and blow 5 minutes. Refill at 120 F.

17. Add:

Common salt—0.50 ounce per gallon (50 pounds).

18. Circulate 15 minutes. Drain. Blow 5 minutes. Unload.

Pigment method—This method has largely supplanted the reduced method because level dyeings are easier to obtain and the procedure is simpler. A dispersion of unvatted dye is circulated through the stock. Caustic soda and sodium hydrosulfite are then added to the circulating bath and allowed to saturate the stock for 15 minutes at 100 F. The rest of the procedure is the same as in the reduced method.

DYEING VISCOSE STOCK

Machines are usually loaded to only about 75% rated capacity to allow for swelling of the fibers.

Viscose stock is not wet before contact with the dyebath because after it is wet and swollen you will have trouble establishing satisfactory circulation of the dyebath. The pigment method is usually used. In one method, the cold pigment dispersion is run into the dry stock by gravity, saturating stock before it swells and before it is compacted through the action of forced circulation of liquor by the pump. In another method, the pigment dispersion is run into the dry stock by gravity at the highest temperature at which the dye formula can be reduced without damaging the sodium leuco compounds.

On the other hand, you can dye viscose stock by preparing the dye bath in the mixing tank of a circulating stock-dyeing machine. For the same amount of viscose stock mentioned in the example above, add to 1,000 gallons of water at 195 F. the dye, 0.5 ounce per gallon of sodium nitrite, 0.3 ounce per gallon of caustic soda, and 0.2 ounce per gallon of triethanolamine. Run this mixture into the dry stock. When it is absorbed, circulate at 195 F. for 10 minutes. Add 0.25 ounces per gallon of hydro and circulate for 20 minutes at 195 F. Turn on cold water and complete the dyeing as in the example above.

DYEING WOOL STOCK

Vat dyes on wool—Selected vat dyes on wool produce shades with extraordinary fastness to light, even in pale shades. These shades also have excellent fastness to washing, perspiration, salt water, cross-dyeing, fulling. Vat-dyed shades on wool are of special interest for automotive fabrics, carpet yarns, knitting yarns, and blankets where typical wool dyes sometimes lack brightness, sometimes adequate fastness.

You can apply the majority of vat dyes to wool. Choose those that show better-than-average lightfastness. You should make tests for lightfastness by sun exposure, because the Fade-Ometer does not give the true lightfastness of vat-dyed shades on wool.

You can use the indigoid dyes under less alkaline conditions than the anthraquinonoid types, and you can prime the dyebath with ammonia instead of caustic soda.

There was a time when dyers did not know that under the proper conditions the physical properties of wool can be retained in the presence of caustic soda. At that time dyers used only indigoid dyes and an ammoniacal dyebath for wool; they thought that the use of anthraquinonoid dyes and the caustic soda in the dyebath would damage the wool.

You can also apply certain anthraquinonoid vat dyes as well as indigoid vat dyes at a relatively low pH from a bath prepared with crystalline trisodium phosphate.

Protecting wool—To minimize damage to the wool fiber when using a caustic soda dyebath, do not let the caustic soda concentration exceed 0.5 ounce per gallon. The damage is related to the total amount of caustic soda as well as to the concentration—so do not overlook the liquor ratio. If the liquor ratio is too high, the minimum concentration of caustic soda required for vat dyeing may result in enough caustic soda to do unacceptable damage to the wool fiber.

Sodium lignin sulfonate in the dyebath helps protect the wool. The temperature of the dyebath usually should not exceed 140 F. Above this temperature serious damage to the fiber is more likely to occur. Under correct conditions, you can vat-dye wool and still retain more of its initial strength and physical character than if you dye with acid or chrome dyes in the presence of several percent of sulfuric acid. For good color yield, use higher concentrations of salt than in cotton dyeing.

After dyeing, give special attention to reducing the caustic soda content of wool to a low value before acidifying. It is especially necessary to remove all traces of caustic soda before you aftertreat the wool with a synthetic detergent. This way you will not bring any wool in densely packed pockets, which tend to retain alkali, into contact with a high-temperature bath.

. . . *Turn to page* 118

The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

Permanent, low in color, non-chlorine retentive and easy to prepare, emulsions based on Epolene polyethylene give you a practical and economical method for improving the hand, abrasion resistance and tear resistance of "wash and wear" treated fabrics.

With Epolene, you can prepare any kind of emulsion system, cationic, anionic or non-ionic, with solids contents of up to 40%.

Choose from three different low-molecular-weight resins to obtain the right emulsion properties and finishing characteristics for your equipment and service.

Epolene E is the highest-molecular-weight resin of the three. It produces stable, low-color emulsion systems of superior quality for use in softening cottons or synthetics, or as a lubricant to reduce needle-cutting and increase sewability. Like other Epolene resins, it needs no curing, lasts through repeated launderings and resists dirt pick-up and redeposition.

Epolene LVE, a new resin type, has a lower melt viscosity than has Epolene E, thus offering somewhat better handling characteristics. Epolene LVE is softer than other resins in the series. The stability of its emulsions in the presence of resin catalysts is outstanding, especially at the low end of the pH scale, as indicated by its relatively high HLB factor.

Epolene HDE is the first high-density, emulsifiable low-molecular-weight polyethylene on the market. Because it is much harder, it improves significantly the abrasion resistance and tear resistance in cotton and cotton blends. Its stability and permanence are excellent. It, too, offers easier handling characteristics during emulsion preparation because of its low melt viscosity.

If you are formulating polyethylene softeners and would like to produce stable, economical emulsion systems of superior all-'round characteristics, look to Epolene from Eastman. Let us introduce you, also, to new time-saving and cost-cutting emulsifying techniques developed at our textile laboratories. For more information on the formulating and performance advantages of these superior polyethylene resins or for specific formulating assistance, write your nearest Eastman office. We invite your inquiry.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Eastman now offers textile finishers 3 basic types of polyethylene

New EPOLENE resins enable textile chemists to formulate broader range of softeners

Property	Epolene E	Epolene LVE	Epolene HDE
Molecular Weight	2500	1500	1500
Density	0.938	0.939	0.956
Ring and Ball Softening Point, °C. (ASTM D-36-26)	104-108	104-105	110-111
Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

VAT DYEING TODAY—PART 2 . . . *Begins on page* 114

Both the reduced—and pigment-methods are used for dyeing wool. You should check the wool for neutrality before you enter it into the dyebath and adjust the pH with ammonia if necessary.

MORE ON WOOL

Ammonia method for indigoid dye—Reduce the dye in a concentrated stock vat using a minimum quantity of caustic soda. Add this stock vat to the dye bath, which has been primed with ammonia, glue, and hydrosulfite. The glue stabilizes the sodium leuco solution against precipitation.

Example:

SHADE . . . Pink.

MATERIAL . . . 1,000 lb. of scoured wool.

MACHINE . . . 1,000-lb. kettle. Liquor volume is 1,000 gallon. Liquor ratio is 1:15.

Procedure:

1. Reduce the dye for 5 minutes in a stock vat as follows:

Indigoid-type pink, double powder (50 lb.)

Caustic soda (18 lb.)

75% sulfonated castor oil (35 lb.)

Hydrosulfite (18 lb.)

Water (150 gallon.)

Temperature: 160 F.

2. Prepare the dyebath at 120 F. with:

Ammonia (28%)—0.16 ounce per gallon (18 lb.)

Animal glue (dissolved in water)—0.16 ounce per gallon (18 lb.)

Hydro 0.12 ounce per gallon (15 lb.)

3. Circulate the dyebath for 10 minutes at 120 F., and then add the stock vat.

4. Circulate for 45 minutes at 120 F. Periodically check the dyebath for alkalinity with phenolphthalein paper, and for hydrosulfite with Vat Yellow G. paper. When necessary, add small quantities of ammonia and hydrosulfite.

5. When you obtain the desired shade, turn on the cold water and rinse until neutral to phenolphthalein paper. (Rinsing must be thorough before you start the oxidation and neutralization step. Alkali tends to be retained in less accessible portions of the wool and stock, and you must take extra care to eliminate this danger, which can cause local tendering of the fiber.)

6. Add in order:

Hydrogen peroxide (130 volume)—about 0.1 ounce per gallon (12 lb.)

Acetic acid (56%)—about 0.15 ounce per gallon (18 lb.)

7. Circulate 20 minutes cold, then circulate while heating to 140 F. Run 10 minutes at 140 F. to insure complete neutralization of residual alkali within the fiber.

8. Drain, and refill at 130 F.

9. Add:

Anionic wetting agent (10 lb.)

10. Circulate 20 minutes at 130 F. Drain. Rinse well at 130 F.

Caustic soda and trisodium phosphate methods—You can use either the reduced or the pigment methods, as follows:

Reduced Method:

Sodium lignin sulfonate (0.1 to 0.25 ounce per gallon)

Caustic soda (0.2 to 0.50 ounce per gallon) or trisodium phosphate crystals (1.0 to 3.0 ounces per gallon)

Sodium hydrosulfite (0.25 to 0.5 ounce per gallon)

Reduce the dye in a stock vat and add to the cold dyebath that has been primed with caustic and hydro. Circulate the dyebath for 5 to 15 minutes and then, depending on the dye formula, slowly heat to 120 F. or 140 F. at a uniform rate. If salt is required, add it in several portions at this point. Usually you will need a total of 2 to 8 ounces of salt per gallon to secure good color yield on wool.

Continue circulation of the dyebath for about 15 minutes longer. Then rinse the stock with cold water long enough to insure that the alkali in the less accessible portions of the mass of stock is well diluted or removed. Then circulate a cold, acidified, oxidizing bath for 5 to 10 minutes, and finally bring it to 140 F. To complete the dyeing process, treat the stock at 130 F. for 10 to 20 minutes in a bath containing a detergent at a rate of 0.10 ounce per gallon. Rinsing in hot water completes the operation.

Pigment Method:

In this method circulate the dye dispersion and the sodium lignin sulfonate through the wool stock at a suitable temperature between 100 and 140 F. Slowly add the caustic soda, previously dissolved in water. Then add the hydrosulfite and continue the dyeing for 10 to 30 minutes, adding salt if necessary at the end of this time and continuing dyeing until the dye is well exhausted. The remainder of the process is the same as described under reduced methods (above).

DYEING SILK AND WOOL

You can vat dye silk by procedures similar to those used for wool—and with the same precautions. The silk fiber is somewhat less sensitive to alkali than the wool fiber. If necessary, the caustic soda concentration may be somewhat higher than for wool—although, of course, the lowest possible concentration is preferable. In high liquor ratios, there is danger that the total amount of caustic soda may damage the silk if the caustic soda concentration is not held to a minimum. At 140 F., 0.4 ounce per gallon (or 12% on the weight of the silk) is a safe amount. At 100 F., 0.7 ounce per gallon (or 20% on the weight of the silk) is safe. Time in the dyebath should not exceed 1½ hours. Ordinarily, 120 F. is the maximum safe temperature for a long-dyeing time. Hold higher temperature, such as 140 F., only for a short time—say, 15 or 20 minutes.

You will need a high concentration of salt to obtain good color yield in medium and heavy shades. In fact, you may need as much as 16 ounces per gallon. Pale shades may require a retardant to facilitate level dyeing. A thorough detergent aftertreatment is necessary to develop true shade and full fastness.

Wool tops and slubbing are wound on perforated spools and dyed on various types of top-dyeing machines commonly found in wool dyehouses. They can also be dyed in a perforated basket in a machine that has two-way instead of one-way flow. The special precautions required to protect wool stock in an alkaline dyebath have been previously described and should also be observed when dyeing tops and slubbing.

SIMPLIFY HANDLING IN AZO DYEING WITH SOLVAY SODIUM NITRITE

There are good reasons why so many azo dye users prefer oxidizing with Solvay® Sodium Nitrite. It's much easier to handle than other common oxidizing agents. In addition, it is an excellent and convenient source of required nitrous acid. All Solvay Sodium Nitrite is anhydrous USP at no price premium. Available in flake or granular form. For details of packages and prices, contact your local Solvay representative.

SOLVAY® CHEMICALS FOR TEXTILES
Caustic Soda • Chlorine • Hydrogen Peroxide
Sodium Nitrite • Soda Ash • Mutual® Chromium Chemicals • Potassium Carbonate

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES: Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston • New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • San Francisco • Syracuse

NEW DYEHOUSE shows port dryers at right. High ceiling improves ventilation and provides more room for two-way power hoist. New color shop is built along left wall.

SAME ROOM from another angle shows two new 750-lb. units and an Avesta dryer. Old roof line is seen as dark line on back wall. Rim of extractor is in foreground.

CHEMICAL TREATMENT & FINISHING

This Dye-Plant Modernization

Cloverdale Dye Works spent $250,000 to expand and modernize. Results? Labor savings of 40%, doubled capacity, better working conditions.

BIGGER PACKAGES, larger dyeing machines, simplified dye handling, and a high-speed dryer now in use at Cloverdale Dye Works (photos) add up to a more efficient operation for its owner, Highland Cotton Mills, Inc.

The modernization program was worked in without serious interruption of production. The program included raising the roof of the dyehouse itself. The extra overhead space improves ventilation and gives ample room for the operation of the powered hoist that handles the yarn carriers.

Along one side of the dyehouse Cloverdale built a new color shop at an elevation that permits gravity flow of all dissolved materials into the expansion tanks of the dyeing machines. This change alone made it possible to get all color-mixing done with one man per shift.

Previously, dyes were mixed by machine operators and trucked to the various machines. The mixing station was at one end of the dyehouse—a long haul to dyeing machines at the other end. This reduction in the work load makes it possible for an operator to oversee four sets of dyeing machines instead of three, the previous work assignment. And the hazard of specking lots on the floor with dry dyestuff floating about has been eliminated.

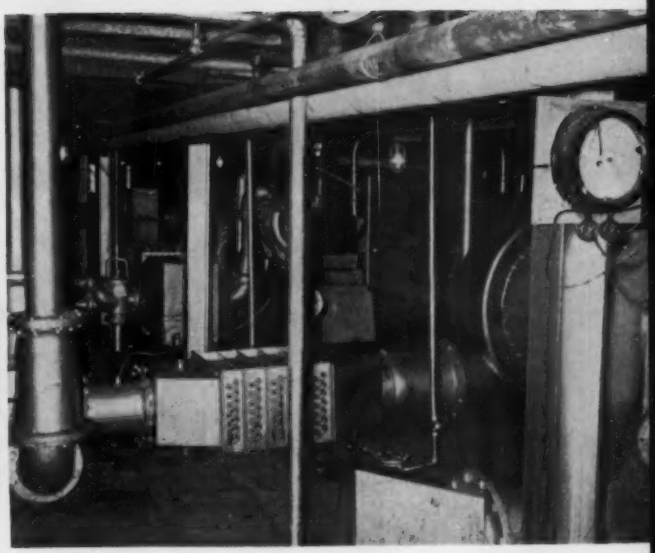
Under the color shop is ample space for storage of dyes and chemicals previously stored some distance away. An elevator in the color shop brings up materials as needed and takes down empties for return or disposal to the trash pile.

USING BIGGER MACHINES

Cloverdale has installed a pair of 750-lb. Gaston County machines to make it possible to dye lots of 1,500 pounds in one run. Customers like the large lots because they cut down the number of dyeings needed to complete an order for one shade. Cloverdale likes the higher production per man-hour that the big machines make possible. This way both company and customer are happy.

The old 1¼-lb. package is a thing of the past at Cloverdale today. Part of the modernization program included modifying the carriers of the old machines to handle the 40-oz. packages, which were standard on the new machines. Packages are now wound on 1⅝-in., stain-

METERED SALT SOLUTIONS help cut costs. Plant uses 800,000 pounds of salt a year. Polyethylene pipe solved corrosion problem between brine storage and mixing tanks.



PORT DRYERS are served by this 75-hp., blower-heater unit. Drying time has been cut to between 60 and 90 minutes. Background: multistage blower for extracting kier.

Pays Off Three Ways

less-steel tubes over a special paper wrapper. Result of this change is that carriers once rated at 250 to 260 pounds now handle 285 to 300.

BOOSTING SPEEDS

Cloverdale still uses a separate extraction kier and port dryers, but a new Avesta closed extracting-and-drying system has cut drying time from 5 to 6 hours on the ports down to 60 to 90 minutes.

This Swedish-designed unit, made under license by Gaston County Dyeing Machine Co., is charged with compressed air at the start of the extracting-drying process. For direct colors, extraction starts by forcing the air charge through the packages without extra heat. Colors less subject to migration can be extracted with hot air, which helps cut down drying time somewhat.

When excess moisture is blown out, drying begins with air heated to 250 F. or more, according to the dyes involved.

A condenser in the system removes moisture from the air, which is reheated and recirculated constantly. Condenser-cooling water, heated by the hot moist air, is returned to hot water storage for future use in processing.

The important winding department adjacent to the dyehouse has been improved to match the greater production of dyed yarn. Four new Model 102 Foster winders are in place, and two more are scheduled for early installation. The new machines will produce about 100 pounds of yarn per hour.

CONTROLLING DYES

Cloverdale's dyeing is, of course, automatically controlled at each step. One- and two-package machines are used to establish formulas for production lots. All production machines have programing controllers that help to make dye lots identical with previous runs.

All classes of dyes applicable to cotton are used. The latest development in dyes, the reactive types, are being used to produce light and medium shades when good fastness to light and washing is required.

COMING: NEW LAB

Cloverdale is currently enlarging its dyehouse laboratory in space once occupied by the color shop. This important adjunct to production facilities will have new sample dyeing equipment, air conditioning, ample lighting, and more space than the old lab.

As in most progressive mills, modernization is a continuing process at Cloverdale.

Gordon S. Eaves, vice president of Highland Cotton Mills, Inc., and manager of Cloverdale Dye Works, is looking ahead and planning for the next move.

"We'll eventually raise the roof along the other side of the dyehouse and put in more machines to increase our capacity," he says.

QUALITY DYEING MACHINES FOR QUALITY DYEING

KWG STAINLESS STEEL PADDLE WHEEL MACHINE

These versatile machines handle all fabrics in either strip, or finished form, also hosiery and tapes.

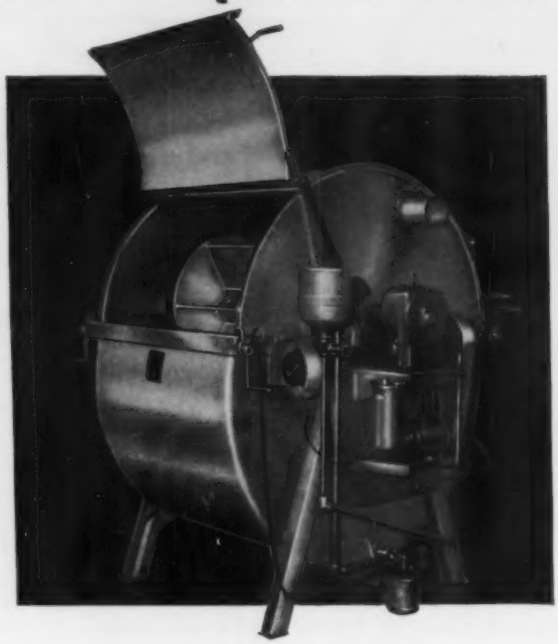
Available with or without covers and indirect heating coils.

- **Heavy gauge, stainless steel construction.**
- **Rounded corners eliminate dye traps, increase strength.**
- **Sizes from 2 to 850 pounds capacity.**

Skein dyeing machines 75 to 1000 lb. capacity.

Zipper tape and narrow fabric skein dyeing machines 100 to 500 lb. capacity.

KWG DUO-FLO Circulating Type skein dyeing machines for high bulk orlon, other man made and natural yarns.



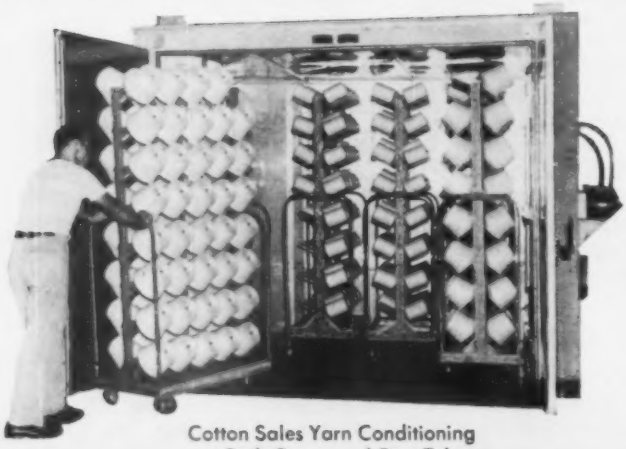
Klauder Weldon Giles MACHINE COMPANY *Adams Avenue and Leiper Street, Philadelphia 24, Pa.*

See us at Booth 947, April 24-28, 1961, Atlantic City, N. J.

CIRCLE 250 ON READER SERVICE CARD

YOUR FRIENDS USE IT!

BE SURE TO SEE THE *FULLY AUTOMATIC* "H-W"® YARN CONDITIONER

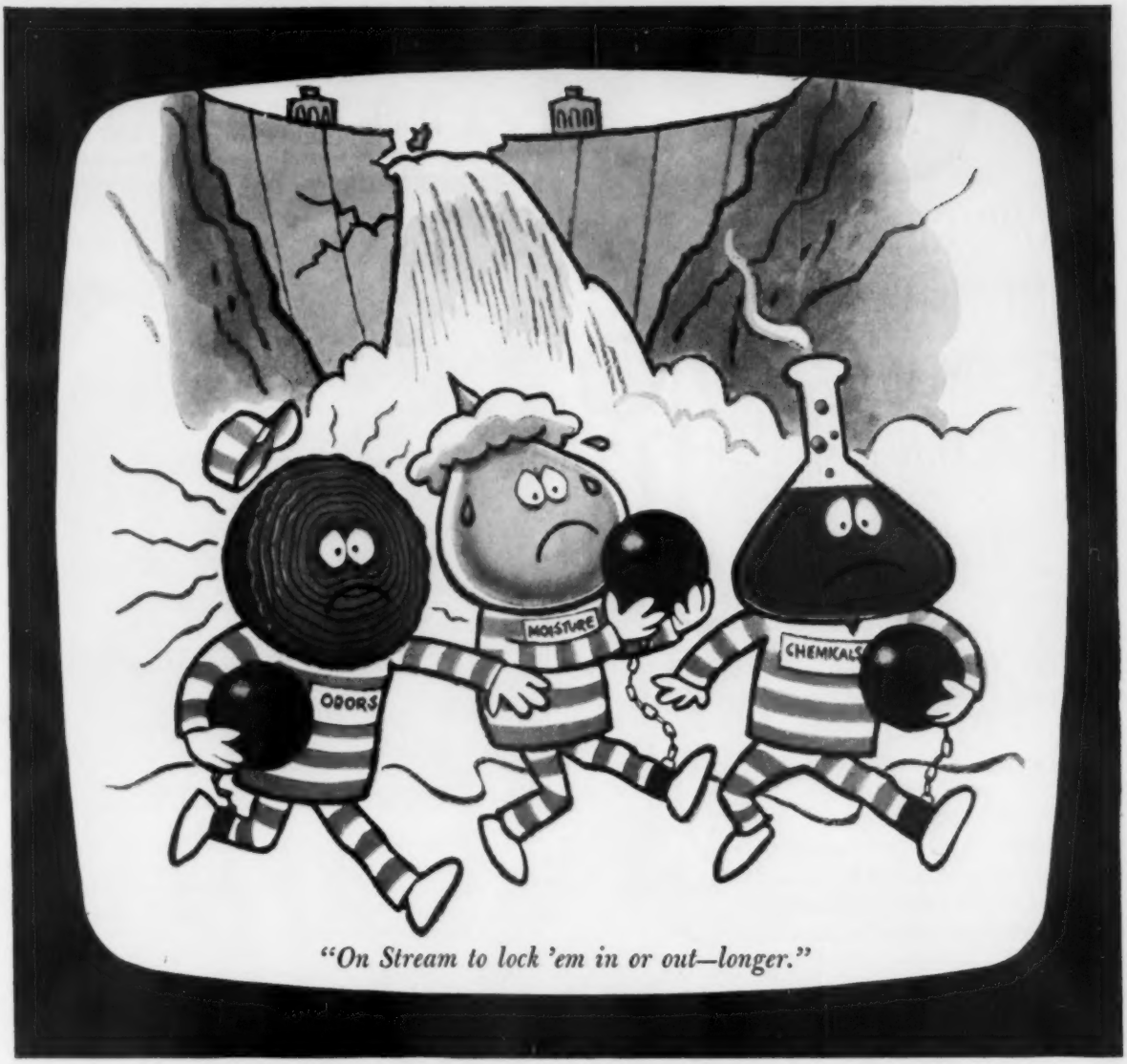


Cotton Sales Yarn Conditioning
Both Cones and Dye Tubes

at the
Knitting Arts Exhibition
Booth 132
Atlantic City Convention Hall, April 24 — 28

THE INDUSTRIAL DRYER CORPORATION

STAMFORD, CONNECTICUT • SALES REPRESENTATIVES IN KEY TEXTILE AREAS



"On Stream to lock 'em in or out—longer."

14,000,000 LBS. RESYN® 3600

POLYVINYLIDENE CHLORIDE LATEX FOR PROTECTIVE COATINGS

Our 14,000,000 pound RESYN 3600 plant is now "on stream" at Meredosia, Illinois. This marks the first commercial production of National's water dispersed polyvinylidene chloride and brings combined capacity at Meredosia to more than 80 million pounds of polymer emulsions and latices annually.

RESYN 3600 promises a revolution in protective coatings and finishes with simple low cost application by sizing, padding, coating or spraying. Its barrier properties are exceptional:

MOISTURE—Moisture vapor transmission is 2½ to 5 times lower than that of polyethylene. ODORS—Resistance to transmission of common gases 1000-2000 times greater than polyethylene. CHEMICALS—Almost complete non-reactivity to concentrated acids, solvents, alkalies and other corrosive materials. Completely resistant to grease and oil. Fire retardancy is excellent.

RESYN 3600 is suggested for industrial fabrics, work clothing fabrics, denims, filter clothes, military fabrics, awnings and tarpaulins, etc. It is also recommended as a binder for nonwoven fabrics and as a finish to minimize crocking of dyestuffs. Call or write your nearest National office for full information.

National RESINS NATIONAL STARCH and CHEMICAL CORPORATION

750 Third Avenue, New York 17 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11

And All Principal Cities in the United States, Canada, England and Mexico

NOW! GET THE FINEST BOTTOM EVER FOR DYEING AND BLEACHING!

ZYROL®

...a sensational NEW detergent developed by Procter & Gamble

Zyrol solves your fabric preparation problems... gives you the dependable results you want. It's because Zyrol offers an amazing combination of properties never before available in a single product...

- Fast alkali rinsibility
- Strong suspending power
- Low foaming
- Excellent compatibility
- Lubrication properties of soap
- Very high activity

Economical, too! Zyrol is a highly concentrated product... a little does much!

Contact your local Procter & Gamble Representative or MAIL COUPON FOR INFORMATION

Procter & Gamble, Textile Finishes Section
P. O. Box 599, Cincinnati 1, Ohio

Please send full details of ZYROL

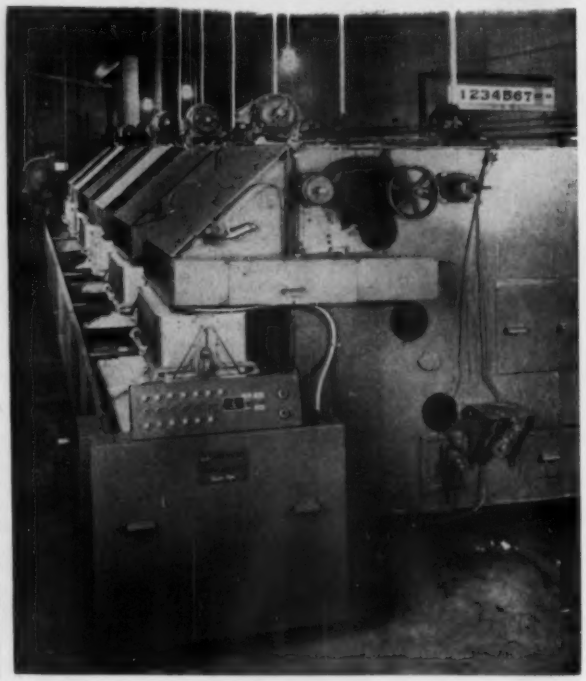
NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

BLEND COTTON BY DENSITY THROUGH WEIGH PANS



NOW AVAILABLE: An economical **conversion** of existing opening hoppers to weighing feeders by the addition of a scale mechanism. To be ranged with the standard sandwiching SYNCROVEYOR (control panel assembly) and plucking cylinder (The SYNCROBLENDER).

OBJECT: To improve process uniformity and efficiency throughout any Blend process by the use of this PRODUCTION INSTRUMENT.

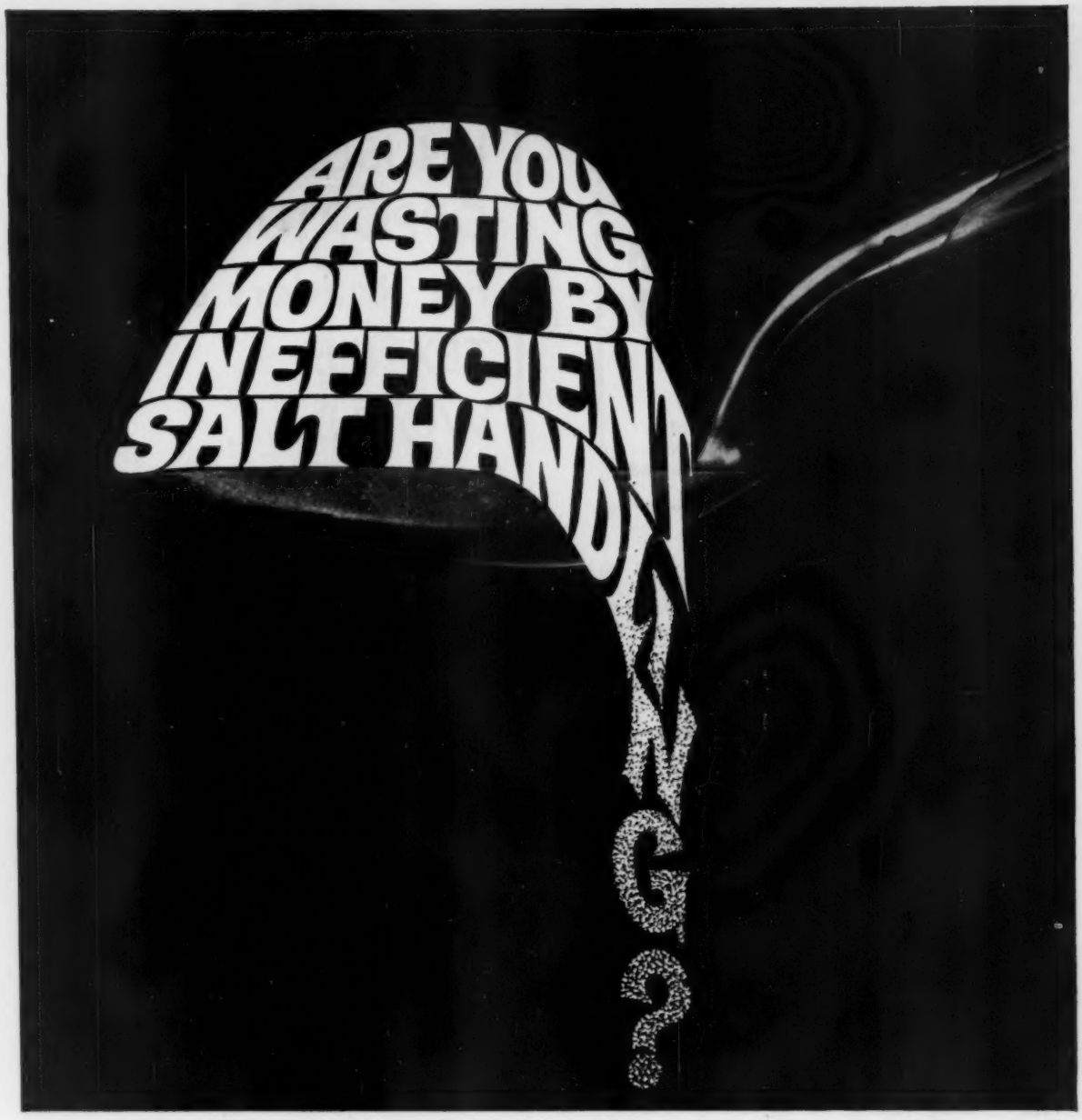
HOW IT IS DONE: Fiber properties can vary widely. Ultimately, the basic yarn evenness requirement is to place the same number of fibers of each density (represented by the laydown) in each inch.

Therefore, consider it a "fact" that stock representation per yard of picker lap is from one bale per hopper and select and laydown bales accordingly. Meter consistently predetermined increments of ounces . . . of each density (fineness) designation in short term control intervals of seconds. Handle reworkable waste through 1 weigh pan.

No additional floor space, connected horsepower, or labor required for **SYNCROMATIC SYSTEM.**

U. S. Sales Agents:
PARROTT and BALLENTINE, Inc.
3440 Augusta Road, Greenville, S. C.

FIBER CONTROLS CORPORATION
BOX 1356 GASTONIA, NORTH CAROLINA



LET MORTON SALT COMPANY SPECIALISTS IN SALT ADVISE YOU WITHOUT COST OR OBLIGATION! Nowadays there are almost as many ways of handling salt as there are companies using it.

Obviously some are more efficient than others. But often it takes a real expert in materials handling to know which of two or three methods is *most* efficient.

Because of its multiplant operations from coast to coast, Morton Salt Company has gained wide experience in all phases of salt handling. Today Morton maintains a department whose sole function is to advise on salt handling problems. There is no cost or obligation whatsoever for this service.

Just fill out and mail the coupon at right, and you will be contacted soon! Do it now—it may mean considerable savings plus increased efficiency for you!

ANOTHER SERVICE OF MORTON
THE ONLY NATION-WIDE SALT COMPANY
FILL OUT THIS COUPON NOW

Yes, I am interested in ways to save money in handling salt.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. TW-4, 110 N. Wacker Drive, Chicago 6, Ill.

April 24-28 Atlantic City's Convention Hall will hum with activity . . but nowhere will you be more rewarded than in RICHMOND's Booth No. 267. A few minutes here may well mean savings of time and money . . and better products for your customers!

RUBBERKNITS®

Rubber-compatible lubricants for ALL yarns coming into contact with rubber; for raw rubber threads; for needle lubrication.

NYLSOFT

An anti-static lubricant which can be applied to yarns IN THE BATH AFTER DYEING. Excellent for package work!

ALSO IN BOOTH 267

A Complete Line of Textile Chemical Specialties for Spinning, Throwing, Knitting, Washing, Dyeing, Finishing.

RICHMOND OIL, SOAP & CHEMICAL CO., Inc.
1041 Frankford Ave., Philadelphia 25, Pa.

DISTRIBUTORS:

Lederer Chemical Co., Inc. 1219 Battleground Ave. Greensboro, N. C.
Fawcett and Co., Ltd. 34 High Park Blvd. Toronto 3, Ontario, Canada
Sagamore Color & Chemical Co. 82 Braintree St. Boston 34, Mass.
Fairbank-Diversey Corp. P. O. Box 1265 Hato Rey, Puerto Rico

Announcing an UNUSUAL OPPORTUNITY For Readers of TEXTILE WORLD . . .

While the supply lasts, the following reprints will be available at these new prices. (Old prices are in parentheses.)

What Superintendents Expect of Overseers 20¢ (25¢)

15 Tips That Will Make You a Better Manager . . . . . 30¢ (50¢)

Your Problem Employees . . . . . 30¢ (50¢)

How to Measure and Compare Mill Performance . . . . . 20¢ (25¢)

New Resins for Treating White Cotton Goods . . . . . 60¢ ($1)

Preparation and Bleaching — A TEXTILE WORLD Refresher . . . . . 65¢ ($1.25)

Report on Nonwoven Fabrics . . 30¢ (50¢)

AND, as an **added bonus,** with the order of any one of the above important reprints, you can get any one of the following reprints **free**—while the supplies last.

- **Integrated Cost Reduction**
- **Cotton Crushproofing**
- **Metallic Yarns Wet-Processing Guide**
- **How to Reduce Your Card Waste**
- **Moisture and Viscose Rayon**
- **Building Material Costs for Plant Construction**

Send orders to
Reader-Service Department
TEXTILE WORLD
330 W. 42nd St. New York 36, N. Y.

Fill your surfactant needs

from CARBIDE'S 9 TERGITOL nonionics

Take your choice from CARBIDE'S TERGITOL nonionics—one that is completely soluble in oil . . . another that dissolves in water at high temperatures . . . or one with a combination of characteristics. TERGITOL nonionics have outstanding capacity to emulsify oils, waxes, and greasy soils—to hold them in suspension. As wetting agents, TERGITOL nonionics are noted for their chemical stability in the presence of acids and salts. They are not affected by hard water or alkalies.

TERGITOL nonionics have proved effective in scouring, bleaching, and carbonizing compounds used by the textile industry. As detergents, they speed dishwashing, laundering, dry cleaning. They give good pigment dispersion, flow-out, and stability to latex paints. Metal cleaners, leather dressings, silicone preparations, shampoos, adhesives, bactericides—all can be improved with TERGITOL nonionics.

Cloud Points of 0.5% aqueous TERGITOL Nonionic Solutions (Degrees C.)

NP-14	Insoluble
NP-27	20
TP-9	51-56
NPX	60-65
NP-35	90-95
NP-40	100
TMN	35-37
XD	60-65
XH	90-100

You can obtain TERGITOL nonionics in 55-gal. drums, combination car load or truck load lots, or compartment tank car shipments. Your CARBIDE Technical Representative can help you solve your surfactant problems. Or write Dept. HC, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y.

TERGITOL and UNION CARBIDE are registered trade marks.

UNION CARBIDE CHEMICALS COMPANY

UNION CARBIDE

CIRCLE 127 ON READER SERVICE CARD

UNIFORMITY

of Blended Fiber Stocks Is Important

THE PROCTOR FIBER BLENDING FEED

accurately weighs and proportions baled stocks. It's automatic. It saves labor. It reduces cost. It improves uniformity of product.

Two or more of these feeds combined with a floor apron, picker and condenser make a complete, simple and effective blending unit. Each feed has its own self-contained control units and is completely enclosed. No extra controls to buy. Each accurately weighs up to 10 dumps per minute. Each can be operated manually or automatically.

The Proctor Blending Feed assures better opening of fibers by the self-stripping rotary pin beaters on the hopper side and on the delivery side of the spike apron.

The Proctor Fiber Blending Feed is one of 3 new high-production feeds: #729B Blending Feed, #729C Card or Garnett Feed, #729P Picker Feed.

Bulletin #459 completely describes the new Proctor Blending Feed. Send for your copy. There is no obligation.

PROCTOR & SCHWARTZ, INC., 7th Street & Tabor Road, Philadelphia 20, Pa.

We're spreading our wings in '61...

OPENING A BIG, NEW FANCOURT PLANT AT GREENSBORO NORTH CAROLINA

WATCH FOR THE OPENING DATE...
THE OPENING OF THE FINEST FACILITIES AND SPEEDIEST SERVICE IN THE TEXTILE CHEMICAL INDUSTRY

Yes, we're moving ahead in '61, expanding our operation to provide our customers with the newest, most modern advancements in the field . . . advancements in every department: research, laboratory, production and service. Our progress means our customers' progress!

NEW MODERN RESEARCH AND DEVELOPMENT LABORATORY
equipped with latest instruments for developing, testing new products . . solving customer problems.

DOUBLE PRODUCTION
expanded manufacturing department with newest equipment to maximize production.

SPEEDIER SERVICE
improved new shipping facilities . . accelerated service to customers.

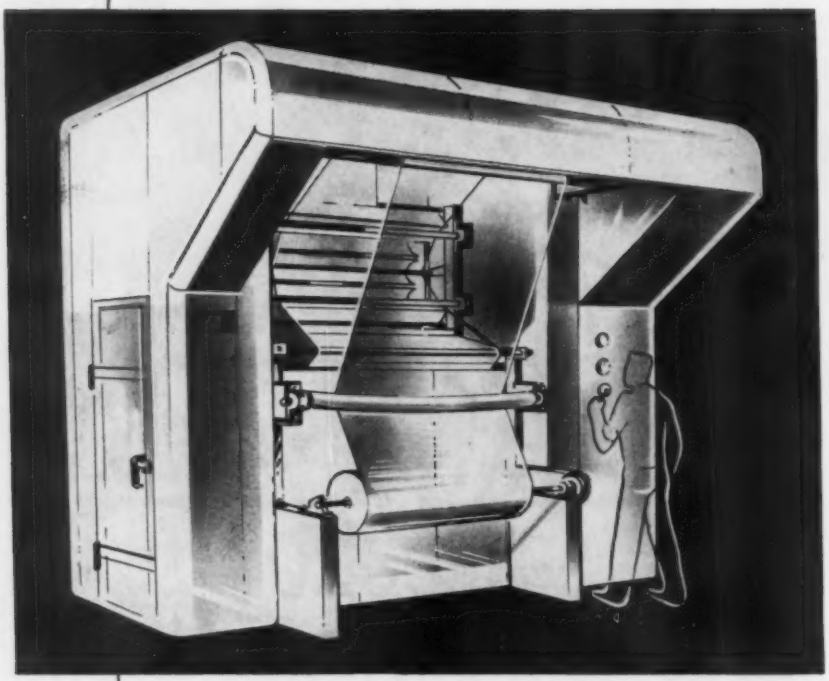
BIG, VOLUME-PRODUCING PLANT
ultra-modern, three-story building on ten-acre tract . . 25,300 sq. ft. operating space.

MOVE AHEAD WITH FANCOURT IN '61 . . . WATCH FOR OPENING DATE!

W. F. FANCOURT CO.
518 SOUTH DELAWARE AVE., PHILADELPHIA 47, PA.
SOLVING FINISHING PROBLEMS SINCE 1904

516 South Delaware Ave., Philadelphia 47, Pa.
Southern Offices—309 E. Davis St., Burlington, N. C.
1412 August Drive, Hixson, Tenn.
Canadian Office—Chemtex Products, Ltd.
49 Densley Ave., Toronto 15, Ontario
Caribbean, Central and South America
A. M. Romero Corp., Empire State Bldg., New York 1, N. Y.
Australia—Paykel Bros., Ltd., 167 Missenden Rd., Newtown, Sydney
New Zealand—Paykel Bros., Ltd., P.O. Box 5046, Auckland, C. I.
Midwest Representatives., Prospect Chemical Co., P.O. Box 126, Mt. Prospect, Ill.

THIS IS "NATIONAL"...



HEAT SETTING MACHINE, MODEL SG-2
The industry's standard for setting synthetic fibers and blends. Also for critical resin and other heat treatments.

DRYING MACHINERY FOR THE TEXTILE, CHEMICAL, PHARMACEUTICAL, FOOD AND OTHER INDUSTRIES

"NATIONAL" Guarantees *Greater Value*—through:

- A thorough analysis of your drying problem by a team of experts.
- The use of proven standards integrated with prescribed design.
- Personal attention, from initial proposal to proven performance.
- Continuous "on-call" survey, analysis and maintenance service.

THE NATIONAL DRYING MACHINERY CO.
HANCOCK ST. & LEHIGH AVE., PHILADELPHIA 33, PA.
Representatives in Boston, Spartanburg, Los Angeles and Foreign Countries
Cable Address—"NADRYMA"—W.U. Code

FORTY-FIRST YEAR • INSTALLATIONS AROUND THE WORLD

How to Get Better Quality

People have an inner urge to do a craftsmanlike job—even if management pursues policies that make quantity the by-word. Here's practical help you can put to use today in dramatizing quality in your mill.

A MILL MANAGER on tour of his plant a few months ago watched a young maintenance man drill a quarter-inch hole in a thin steel plate with a dull drill. The man was having a tough time. It took him several minutes to do the job. And when he was done, the hole wasn't where it was supposed to be.

The manager asked the young maintenance man why he hadn't sharpened his drill. Would he say he didn't know how to sharpen it? No. What he did say was this:

"Aw, it's too much trouble."

SENSING QUALITY

This Pointer is about people like that and attitudes like that and—as a result—quality like that. It's going to try to do just one thing: show you how you can improve quality in your department by paying extra attention to your people's attitude.

The feeling for quality that some people have is easier to label than to describe. Put it this way: Some people are built in such a way that they like everything to be "good." They like things to be pleasing in appearance, neat, high in value, and useful because those things are well made and built of the finest material. These people have a sense of quality —a feeling for it. Show a man like this a cheap, tawdry, poorly made article and he feels uncomfortable.

You've probably known a man who won't work in a shop that makes third- or fourth-rate products. If he can't be proud of what he makes, doesn't have the urge to boast about how he helps make a product that's the best of its kind, he wants no part of it. In the same plant where the worker used the dull drill, another man was polishing a brass fixture. He buffed it all over. You might have expected him to lay it in the tray and pick up the next fixture. But he didn't do that. Instead, he took a look at what he had just done. Unsatisfied, he put the same fixture back on the wheel and buffed it again. He examined it once more. Back to the wheel. He did that four times. And when he finally did place it in the tray, the fixture shone well enough to reflect the smile of satisfaction on the operator's face.

This man was expressing that valuable but all too rare "feeling for quality" that can make such a difference in any plant.

FINDING THE ANSWERS

Jim Tarrant, supervisor of the printing and dyeing section of a small integrated mill, had been talking about such matters with his boss. For a few moments he was thoughtfully silent, then he put it to his boss straight:

"If my people haven't got a feeling for quality, how can I give it to them?"

The boss thought about it himself for a couple of minutes.

"Well," he finally said, "there must be a way, because some people certainly do have it. Let me mull it over for a bit, Jim. I'll let you know any ideas I can dream up."

After three hard-mulling days with no results, the manager sought professional guidance. The problem was an elusive one, but there had to be an answer for it. The professional approach was to undertake a whole series of explorations that included discussions with psychologists and training experts, dips into the "motivational" sections of libraries, interviews with workers who were producing high-quality products and with workers who *weren't* and, finally, several brainstorming sessions in a search for truly new ideas.

Here are the answers. Note that there isn't one sure, certain method but several possible methods. Note also that there are one or two basics that must be understood before getting into methods. This is what the professionals presented to the manager and the manager presented to his supervisor.

Without question, the major factor is how the boss thinks and acts. Time and time again, people in low-quality shops and departments used some equivalent of the term, "Who cares?" And they were talking about themselves, yes, but primarily about their superiors.

There were expressions like:

"All *he* wants is to get the stuff out."

"Quality? What's that? 'Quantity!'—that's what we hear."

ENLISTING THE BOSS

An interesting case was the plant where almost everyone was eagerly trying to improve quality. The "almost" represented one man, in the highly influential position of works

By S. G. WILLIAMS
Management Consultant
New York City

manager, who was out to break production records. He even went so far as to *encourage* workers to let material go by that they knew was below standard.

How the Boss Thinks—The plain fact is that before people will develop a feeling for quality, their immediate superior has to *have* such a feeling. And behind that plain fact is another similar fact: The company and its officers have to want its products to be quality products.

Now look back at the statements quoted above. You can sense in those comments an actual resentment. Why? Because, deep down inside, people have an urge to do their work well and they object, consciously or unconsciously, when they are obliged—because of the attitude upstairs—to do it poorly.

Let the bosses want quality, both the top management and the immediate supervisors, and the first essential step has been accomplished. But there is more to it than that.

How the Boss Acts—Whatever your wants are (or for that matter, your feelings or your dreams), what counts is what you *do*. That is what your people can see and understand. And, consequently, that is what influences *their* feelings and their actions.

For instance, you dare not relax standards for a minute. If you put your O.K. on production not quite up to the prescribed level, what you have approved becomes the new standard. It is in this manner that there is a gradual, almost imperceptible, drop in the level of value of a given product.

Every one of us has had the experience of trying a new product when it is first put on the market, finding it better than others, and making it a regular purchase. Then, in a little while, we've begun to notice that it isn't as good as it was.

What caused it? Was it top management deciding: "Now that we've got our customers hooked, we can give them less for their money."? More likely, it was one supervisor here letting up just a bit, another supervisor there paying slightly less attention to quality, until the sum total was a substantially poorer product.

So, if we are agreed that it is primary that the supervisor think and act quality, let's see how you transfer that thinking and that action to your employees.

TALK QUALITY

A foreman in Michigan talks quality without opening his mouth. Here is how he does it:

In his plant they manufacture automotive and aircraft valves, valve-seat inserts, and tappets or valve lifters. Very close tolerances are required.

The foreman erected a small pedestal near the entrance into his department. On it he placed a black velvet cloth and on the cloth he set a single tappet with a sign: "This is a perfect tappet. Isn't it a beautiful thing?"

The next week, he highlighted a valve, then an insert.

At this point, the personnel people picked up the idea, moved the pedestal, products, and signs out by the prominent front door, where visitors came in. Whereupon, our imaginative foreman erected another pedestal—ugly with burlap cloth and a series of scrapped products with such signs as:

"Stillborn. Ground to death by a careless operator."

"This valve might have flown in the heavens. Instead, we bury it with dishonor because of one tiny (and unnecessary) nick."

You may or may not want to be as dramatic as our Michigan friend, but the principle can be used as well by you. Here are simple, everyday ways to drive home the quality point:

. . . *Exclaim over jobs that are especially well done.* A well-wound cheese, for instance, is a handsome thing. How long has it been since you have even thought such a thought, to say nothing of mentioning it to your subordinates?

. . . *Praise your successful quality producers,* not only to themselves but to others as well.

. . . *Be on the spot when a machine starts failing* to meet standards. Express your concern not for the slow-up, but the quality drop.

. . . *Be on the alert for suggestions* from workers that might improve quality, giving this type of suggestion as much acclaim as you do those that boost production.

. . . *Run your own departmental contest* for the individual or group that produces the best quality, the least waste or scrap.

. . . *Keep it up.* The quest for quality is an early-starting, never-ending process.

A manager in Rhode Island who makes pencils has a habit of stopping beside an operator and asking: "Charlie, if you wanted to make an even better pencil, a perfect pencil, what would you do?"

Often he gets an answer like, "Gosh, I don't know." or "I think we already are making it." But once in a while one of the men has an idea, and it is tried and, if feasible, applied. Whether that happens or not, however, this manager is constantly keeping in the minds of his workers his strong interest in a better product.

Look for quality tips in the business magazines. If you simply went through this copy of TEXTILE WORLD with the one question foremost: "What can I find that may help improve what I am doing?", you are almost bound to come up with impressive possibilities. Even if you don't, this exercise will be enough to get your own frame of reference re-oriented to quality.

BALANCING QUANTITY

Back near the beginning of this Pointer we described an operator buffing and re-buffing a brass fixture. We can hear supervisors all over the globe saying "Sure, that's fine. But if all our people did things like that, we never would get the production out!"

They would be absolutely right. But let's ask this question: which is easier, to get people to work faster or to get them working *better?*

Get the quality attitude set, build a "feeling" for quality into your people, mainly by the example you represent to them, and the problem of quantity—good, salable quantity—will take care of itself.

Remember, your machines, with a little adjusting now and then, will do the very best they can. Where you have the opportunity for the great improvement in quality is by attention to attitudes of people.

MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK
MICROROK

HAVE YOU LOOKED INTO THE

- **Uniform Extraction**
- **Uniform Penetration**
- **Long Life — measured in years**

MICROROK® combines the best properties of metal rolls with the best properties of rubber rolls. It combines hardness and smooth finish with the resiliency of rubber. It gives outstanding life between grinds, thus reduces your maintenance costs. Microscopic depressions in the surface, which looks mirror-like, aid in gripping fabric and preventing slippage.

For the MICROROK catalog page containing complete technical information, see your S-W Sales Engineer.

STOWE-WOODWARD, INC.

Ask the man from S-W . . .

. . . about the excellent wear-resistance qualities of **MICROROK** covers. Heat resistance this cover offers, too, up to 180°F. Padder, Mangle, Washer, and Carbonizer Rolls give long service life when their covers are **MICROROK.**

Literally hundreds of **MICROROK** Rolls are proving daily that they are the most versatile hard rolls in use today. This and other factors mean cover longevity which you may not be getting. Ask your S-W man for the facts.

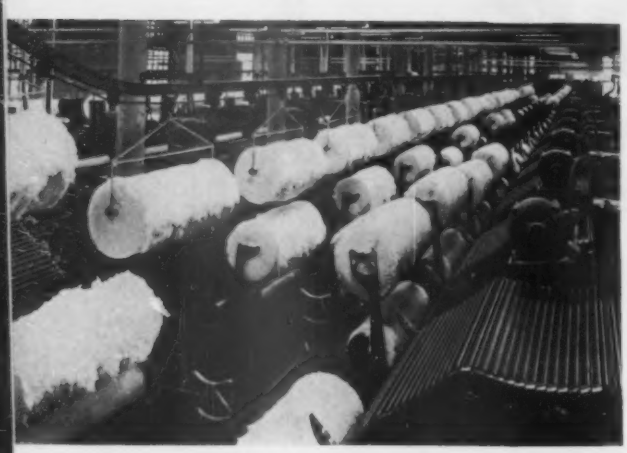
STOWE-WOODWARD, INC.
Newton Upper Falls, Mass.
Neenah, Wisconsin
Griffin, Georgia

on the West Coast

HUNTINGTON RUBBER MILLS, INC.
Seattle, Washington
Portland, Oregon
Port Coquitlam, British Columbia, Canada

CIRCLE 133 ON READER SERVICE CARD 133

TEXTILE WORLD . . . COST CUTTERS

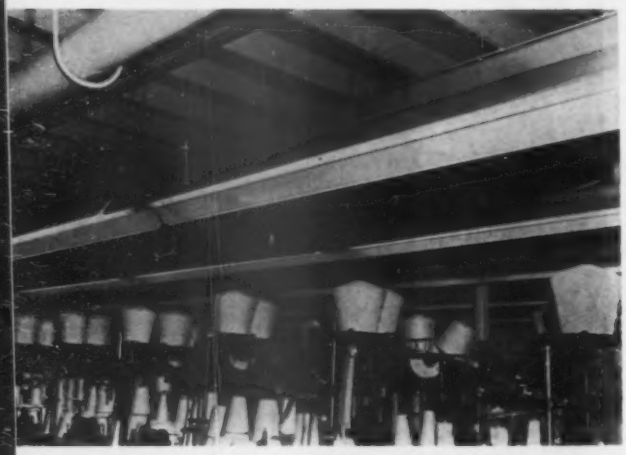


Lap Conveyor Solves Storage Problem

Pickers at Mayfair Mills, Arcadia, S. C., can make enough laps in two shifts to supply the card room for three shifts. Surplus laps were formerly stored in the picker room. Recently, management decided to install 12 additional cards for quality purposes in the space used for lap storage.

Problem: where to put the 160 laps needed for the third shift? After studying the situation, Mayfair installed a 1,080-ft. Dearborn cable-link conveyor. The storage problem was solved—third-shift laps are simply left on the carriers. Manual handling and lap damage are lower, too.

The system has 180 carriers (every six feet) and a speed range of 10 to 30 fpm, can handle 80-lb. laps.



Better Lighting Gives Better Hosiery

Doubling the lighting foot-candles in the knitting room at Villa Rica Hosiery Mills, Villa Rica, Ga., has reduced second-quality hosiery 1%.

Formerly, Villa Rica's lighting level was 40 to 60 foot-candles, with the higher values near the windows in daytime. The new lighting output is 112 foot-candles, and there's no variation at any point in the knitting room. Illumination is just as bright at the center of aisles between machines as at machines. Lighting fixtures are 96-in. industrial slimline luminaires. There are two rows over each machine.

These same luminaires are used in the finishing room and are arranged in squares so that pairing, inspecting, and packaging tables can be moved to any desired position with 100 foot-candles of light at all points.

One Man Replaces Two For Handling

Before the conveyor shown in the photo was installed, it took two full-time men to store and remove yarn at Harriss & Covington Hosiery Mills, Inc., High Point, N. C. Now one does the entire job.

Working the old way, yarn was unloaded from motor trucks, moved with hand trucks to the elevator, and unloaded in the basement. Then when yarn was needed, it was put on hand trucks, taken to the elevator, and unloaded at knitting machines.

The new conveyor (Alvey) is at the shipping entrance of the mill. Cases of yarn are put onto the conveyor, an employee presses a pushbutton, and the conveyor and box are raised to a new warehouse at the knitting-room level. Then a connecting conveyor routes the packing cases to the storage area.

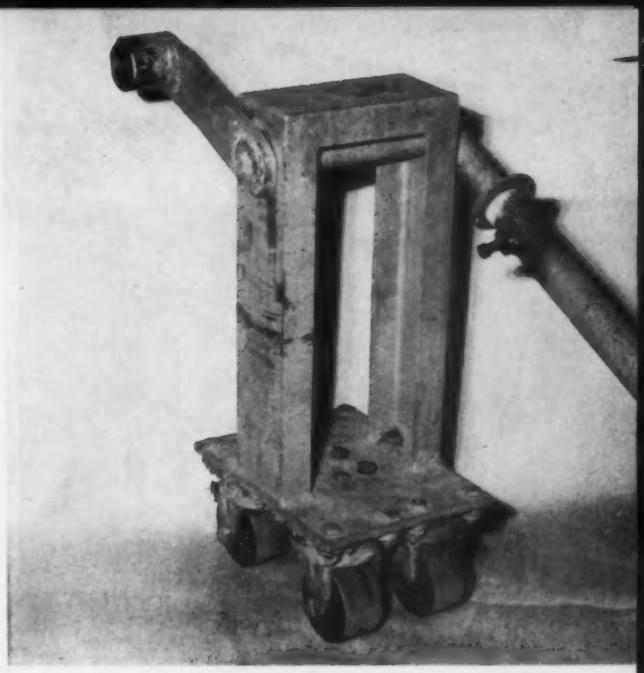
Truck Cuts Two Men From Lifting Job

Until recently, four men were required to lift warp yarn beams into frames for drawing-in hands at Leach Textiles Ltd., Huntingdon, Que.

This practice pulled three men from their regular jobs, because only one full-time man is employed in the drawing-in room.

But with the truck shown in the photo (right) two men can easily lift a yarn beam that weighs 900 pounds. Two trucks are used, one for each end of the beam. And one truck has to be for a right-hand lift and the other for a left-hand lift.

The lifting arm is made from round steel stock and is 4 feet long. The truck base is 12 inches long and 9 inches wide. The frame is 4-in. channel iron. Over-all truck height is 2 feet.



Ingenuity, Layout Saves Labor

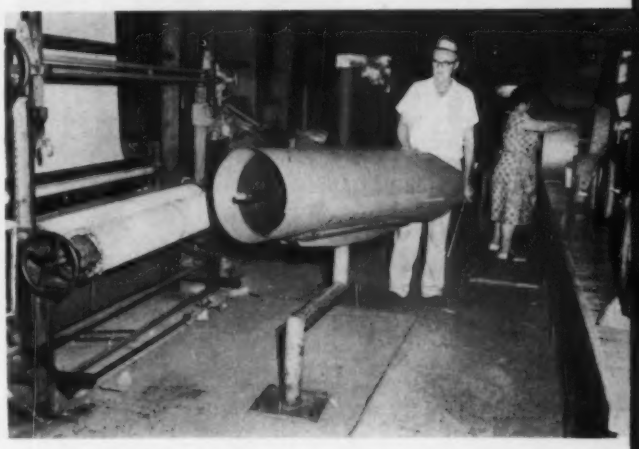
By combining doffing and wrapping, and laying out a handy delivery area, a Southern mill is able to save half the cost normally credited to these production operations.

Goods coming from a finishing tenter are wrapped right on the batcher by the frame backtender.

The paper supply is mounted overhead, and gummed tape is kept handy.

Once the roll is wrapped, the operator eases it off the batcher onto a special dolly that serves both batcher and receiving bench.

The dolly is mounted securely in the concrete floor. The operator can swivel the dolly to take the roll from the batcher, then turn it to deliver to the bench.



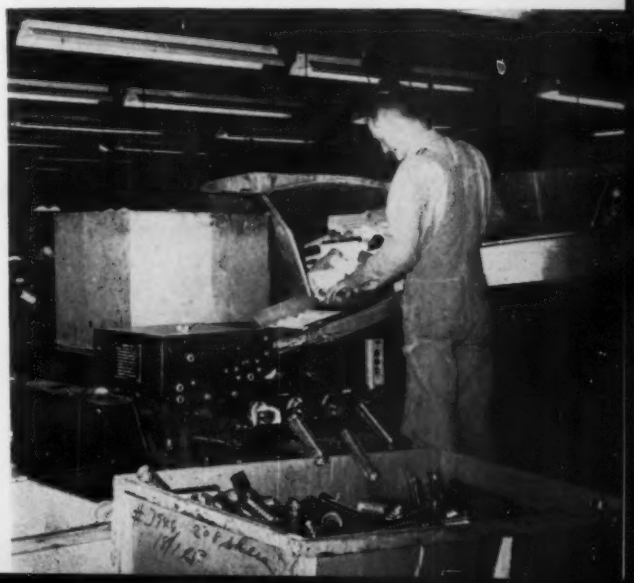
Tube Stripper Triples Output

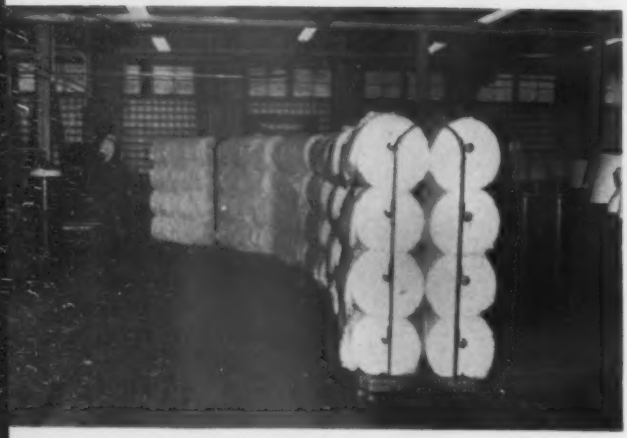
You can strip used dye socks off three times as many dye tubes by machine as you can by hand in a given length of time.

That's what Standard-Coosa-Thatcher finds since it mechanized a hand operation with a Terrell Machine Co. unit. What had been a tiresome and time-consuming job is now nearly automatic.

Tubes from the winding room are placed in a hopper that delivers them to a chute that feeds the machine. It's an easy operation.

The operator has only to line up the tubes so that they will fall into place in the machine. He also pulls out any Franklin springs, which are handled separately. The stripper cleans three tubes at a clip and ejects them into a receiving crate for reuse.





Lap Train Cuts Handling

Lap hauling is a cinch at Standard-Coosa-Thatcher's Piedmont (Ala.) plant. With this battery-operated Clark truck, one man is now hauling as many laps in 4 hours as three men formerly handled in 24.

The "train" (photo) is made up of six carriers, and each carrier holds eight 60-lb. laps. A full load represents about 5½ bales of cotton.

Laps are transported from the picker room on the train through a passageway to the card room. Here, carriers are parked until the cotton is needed.

S-C-T could make larger laps as the pickers are equipped with high-compression calender sections, but management says that the convenience of handling laps in this manner offsets the advantages of larger laps.

New Jigs Boost Load, Cut Costs

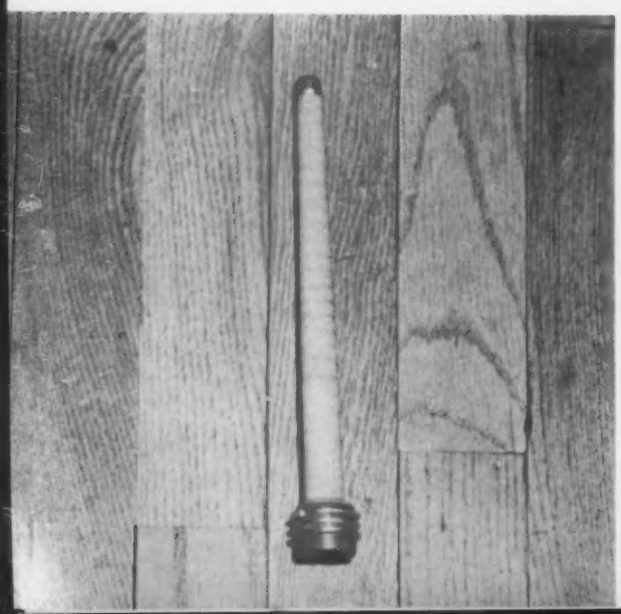
Mount Hope Finishing Co. handles a considerable amount of drapery and dress-good fabrics that are jig dyed.

Biggest problem with these goods is to get sufficient yardage per roll to keep the dyeing costs in line with revenue in a highly competitive market.

Ordinary jigs build up so much speed toward the latter part of the end that roll size is limited to 700 to 800 yards on heavy goods.

The plant is now using five Van Vlaanderen constant-speed, constant-tension jigs for these and other bulky fabrics.

Result: Batches of 3,000 yards of dress goods can be handled without throwing out dye liquor. Automatic reversal at each end cuts operator workload, too, Mount Hope management reports.



Modified Quill Holds 20% More Yarn

Mary Leila Cotton Mills, Inc., Greensboro, Ga., is putting 20% more yarn—1.50 instead of 1.25 ounces—on its 8-in. quills without changing loom shuttles. Results are substantial savings in bigger battery-filling jobs, lower doffer cost, and longer shuttle life.

How is this accomplished? Simply by cutting ⅛ inch off the No. 3 quill butts and adding ⅜ inch to the length of the quill. This change gives 8½ inches of usable space on the quill instead of 8 inches.

Shuttles were in effect increased from 15¾ to 16 inches by putting in a shorter picker. The same box is used as with the 8-in. quill on the E-model looms.

One thing that made this change possible: Mary Leila uses plastic shuttles. The density of the plastic shuttles permits them to carry the extra yarn weight without affecting the boxing operation. The plastic shuttles run twice as long as wooden shuttles.

TEXTILE WORLD . . . News from the Mills

Acme-McCrary Corp., Asheboro, N. C., is the new name for the consolidation of the Acme Hosiery Mills, Inc., and McCrary Hosiery Mills Inc., both of Asheboro, N. C.

Alkahn Silk Label Co., Inc., Paterson, N. J., has announced the opening of its Potomac mill on a 2-acre site in Williamsport, Md.

American Felt Co., Glenville, Conn., has announced the formation of its new Filter Products Div. in Glenville, Conn.

Appleton Woolen Mills, Appleton, Wis., has announced the establishment of a Product Services Dept. responsible for product design, customer technical service and liaison, quality control, and inspection.

Avondale Mills, Sylacauga, Ala., has bought new Model M6A Even-Draft drawing frames from Whitin Machine Works.

E. T. Barwick Mills, Inc., Chamblee, Ga., has purchased Jefferson Woolen Mills, Knoxville, Tenn. The mill name will remain unchanged and plans have been made for modernization and expansion of operations in weaving and yarn production.

Berkshire Knitting Mills, Reading, Pa., has announced its withdrawal from hosiery manufacture in Canada, but Berkshire brand hosiery will continue to be made in Canada by another company under a licensing arrangement.

Brisbane Fabrics, Inc., Woonsocket, R. I., has purchased the Glendale, R. I., mill of Stillwater Worsted Mills, Inc., for an undisclosed price, and will move operations to Glendale.

Burlington Industries, Inc., Greensboro, N. C., has reached an agreement with Nobilis, S. A., of Mexico City for joint operations in Mexico in the manufacture of carpets and rugs. The joint operation will be known as Nobilis-Lees, S.A., with headquarters in Mexico City.

Clark-Schwebel Fiber Glass Corp., Anderson, S. C., has begun operations in its new $3-million fiber-glass weaving and finishing plant. About 800 persons will be employed at full capacity.

Cone Mills, Corp., Greensboro, N. C., has bought 377 Saco-Lowell 20x42-in. can coilers for the White Oak Mill. Cone has also ordered 32 Saco-Lowell SJ Magnedraft spinning frames for the Pineville, N. C., plant.

Dan River Mills, Inc., Danville, Va., has announced plans to spend $3-million during the current year for new machinery and modernization of machinery and equipment already in place in its Danville and Alabama divisions.

Deering Milliken Research Corp., Spartanburg, S. C., has announced completion of a $100,000 chemical plant adjoining the research headquarters. This addition will enable the center to manufacture its own chemicals.

Dominion Textile Co., Montreal, Canada, has announced that it will spend $4-million on modernization of production facilities at its Montmorency, Que., branch. Scheduled completion date: August, 1962.

Henderson Cotton Mills, Henderson, N. C., has purchased 11 Model N spinning frames from Whitin Machine works.

Joanna Cotton Mills Co., Joanna, S. C., has signed a $400,000 contract for the modernization of 215 spinning frames with Robert Co., Sanford, N. C.

A. & M. Karagheusian, Inc., Freehold, N. J., has announced that it will discontinue the manufacture of axminster carpets and rugs, effective June, 1961, and will sell all excess facilities at Freehold.

The Kendall Co., Boston, Mass., has sold the office building of its cotton mills division in Charlotte, N. C., to J. A. Jones Construction Co., of Charlotte.

Narrow Fabric Co., Reading, Pa., has announced the acquisition of a new plant in Wytheville, Va. The company will use the plant for braiding operation.

Reeves Bros., Inc., New York, N. Y., has opened a new laminating plant for Curon urethane foam in Los Angeles, Calif. It will be called Curon of California. Reeves also has entered into an agreement with Shell Chemical Co. to develop special grades and modifications of polypropylene for application in the textile field.

Roma Knits, Inc., New York, N. Y., is the name of a newly formed firm that will manufacture knitted fabrics for the sportswear trade and over-the-counter selling.

Rossville Yarn Processing Co., Rossville, Ga., has been organized to conduct experimental work on the processing of various types of yarn. For the present the company has leased a part of one of the floors of a Richmond Hosiery Mills building in Rossville.

William Skinner & Sons, Holyoke, Mass., has announced that it will be sold to Indian Head Mills, Inc., Cordova, Ala. The firm will continue operations under the Skinner name.

West Point Mfg. Co., West Point, Ga., has organized a new department at its headquarters in West Point to serve as internal liaison between sales and manufacturing in all matters relating to production, inventory control, quality control, and fabric development. The new function will be known as the Production Dept.

See us at the knitting arts show...

and see for yourself why...

So many good things begin with ENKA NYLON Yarns

• 15-denier seamless stretch hosiery in Enka nylon—made with a *shaped foot* that clings to the slimmest ankle ...stretch stockings with greater eye appeal, a softer hand.

• 20-denier monofilament seamless sheer hosiery in Enka nylon—a yarn utilized by a famous couturier brand because of its longer wearing qualities, sheer look.

• Fabulously successful Panti-Legs™ in resilient Enka nylon—combining sheer stockings with an opaque panty.

• Support stockings in Enka nylon—sheer, shapely and long-wearing hosiery with instant recoverability and shaped fit for greater support.

• Men's Ban-Lon® half-hose and sport shirts in Enka nylon—with extra softness, perfect fit.

• Dazzling white foundations fashioned of Enka's wondrous *Blanc de Blancs*™ nylon—the "white of whites" yarn with terrific counter appeal.

• Warp Knit Enka nylon fabrics in brushed and unbrushed doeskin and suede effects, as well as foam laminates.

• Fashion tricots of Enka nylon for fine lingerie. Note the beautiful colors, the *even* dyeing qualities, the special softness of Enka nylon tricots.

• Raschel fabrics made of Enka's 40/8 semi-dull nylon with greater resistance to snagging...and Enka's 200/32 bright yarns.

See them—compare them at the show. Find out about Enka's unique *Customer Service Program*, too. National advertising, in-store merchandising aids, hangtags, publicity that will give you powerful promotion support—help spark more retail business for you.

We'll be looking for you at Booth #86 in Convention Hall, Atlantic City—April 24-28.

American ENKA Corporation, Enka, N. C. • Producer of nylon • rayon • yarns • fibers

NEW YORK OFFICE: 350 Fifth Ave., New York 1, N. Y. • DISTRICT SALES OFFICES: Greensboro • Providence

What's New This Month in . . .

Fibers, Yarns, and Fabrics

By CAROL WILHELM, Copy Editor, TEXTILE WORLD

Wool Takes Shape

A real break-through in wool—elasticity in an all-wool fabric. That's just what Timely Clothes has done with its new process that uses heat and chemicals and, as a result, changes the molecular structure of the fibers.

Ideal for men's suits and slacks, the fabric is woven to produce a stretch cloth. The yarns are specially spun. Higher twist than normal is used on the 2-ply yarns and the single yarns within the ply have opposing twist (S and Z).

The fabric yields when tension is exerted by the wearer and is restored to its original shape when the tension is relaxed. Timely has set standards for dresswear at 15% elasticity in width and 6% in length.

Dateline: Tokyo

TEXTILE WORLD's news office in Tokyo reports that the Kureha Spinning Co., textile manufacturer, is marketing a new nonwoven bonded fabric under the tradename Bondene.

The company bonds the fibers with a synthetic resin. The new nonwoven is nonwrinkling, nonraveling, nonshrinkable. It has good firmness and needs no ironing. Probable end use: interlinings.

Tagging Quality

Throw rugs of 100% Du Pont nylon staple pile are now sporting a new tag. The tagging program is sponsored by Du Pont. The company is offering the tags to all manufacturers of first-quality lines that meet the requirement of a special licensing agreement.

What's the purpose of the program? To give manufacturers and retailers an opportunity to link their products directly to Du Pont's advertising and promotional efforts.

The program is supported by Du Pont consumer and trade advertising. Plans include ads in women's service and shelter magazines as well as selected trade publications.

In the Summer Swim

Young girls can find something new in the Jantzen 1961 line of summer swimwear. The new line features two styles in colorful horizontal stripes.

The elasticized boucle knitted fabric is a blend of Creslan, cotton, nylon, and rubber. The style: classic maillot.

One of the three-color combinations for preteen sizes are tourmaline pink, light yellow, and white. The other combinations: coral, purple, and white; and turquoise, green, and white. These suits retail at $12.

The swimsuit for girls in sizes 7 to 14 is styled in narrow or horizontal stripes, combining four vibrant colors. The suits in these sizes retail for $8.

Laminate Round-Up

You've been reading a lot about laminates and laminated fabrics—in the retail ads and the trade papers. Here's some round-up information culled from a speech given by R. H. Wolf, sales manager of Allied Polymer Corp. Mr. Wolf spoke at a meeting at the Textile Veteran's Association a few months ago. We feel that his views on this up-and-coming textile trend are well worth repeating.

What are laminates? They are knitted and woven fabrics that have been bonded to a multicellular foam. To date, Mr. Wolf says, only 2% of the laminates are on woven fabrics. And the most used foam for laminates is polyurethane.

How are the laminates applied? Either by heat or adhesives. The major portion, however, is heat laminated.

What are the important features of laminated fabrics? When you apply a laminate to knitted fabric, you gain added fabric stability. Laminates give warmth with no additional bulk. They can be cut more easily.

. . . And some of the problems? One problem may develop in sewing. Mr. Wolf points out that this problem may be overcome by using Teflon-coated rollers in the sewing process. Problems can arise when you laminate some water-repellent fabrics. Another problem—reduction in width. The width of the laminated fabric will be less than the finished width of the untreated goods.

Enters New Field

P. H. Hanes Knitting Co. has entered the branded men's knitted sportswear field. It has introduced a quality line of men's sweaters and is marketing the line under its label, "Pro's Choice by Hanes."

The sweaters, scheduled for fall 1961 selling, are all-wool and are mothproofed with Duron. They have been dyed with milling colors. The styles represent a trend to less bulkiness. The line will retail from $10.95 to $14.95.

No Backing on Belt

L. H. Shingle Co., manufacturer of industrial leather belting, is using a new oriented nylon core in its Nycor-M transmission belting. The nylon core—⅛ inch thick—is in one solid piece and covers the full width of the belt.

Formerly, the manufacturer has to cement the nylon core in 1-inch widths and then cement the core to

a clothbacking. This method held the strips together longitudinally according to the width of the belting desired.

The new method needs no clothbacking. As a result, the new belting is more flexible—it can run over small pulleys and crown pulleys. When the nylon core is used with outer plies of chrome leather, the belting has greater strength per square inch. The new belting also shows better absorption of starting shock and longer belt life.

Chatham News

Chatham Mfg. Co. introduced a blanket of 100% Creslan last month.

The blanket comes in five pastels —honey beige, petal pink, morning-glory blue, leaf green, buttercup yellow—and white. It's available in 66-, 72-, and 80-in. widths and retails from $14.95 to $16.95. Blankets are 90 inches long and have an 8-in. nylon binding.

Socks with Stretch

Robert Hosiery Mills, Inc., has introduced new ladies' stretch innersock called Sport-Sox. The new terry innersock is made of 60% cotton and 40% Helanca nylon.

It fits sizes from 8 to 11 and comes in white. Retails at 59¢ under Sport-Sox by Rondo trademark.

On a Hopeful Note

Allen Knitting Mills' president, Harry Goldman, is optimistic when he looks ahead to fall 1961 sales: "The expanded use of color, patterns, and laminates in the knitted jersey field has been received with such enthusiasm by manufacturers of men's and boys' sportshirts and outerwear garments that the volume of business we now anticipate for this year's fall line should surpass that of last year's."

His company's new line features expanded ranges of green, gray, blue, and neutral colors—with many pattern innovations in a new range of all-Acrilan knit shirting. Another innovation: a line of Portuguese-inspired jersey fabrics, which combine vivid pastels with black. Both these lines will be offered for fall.

It's Bonded News

The Felters Co. is marketing Fiberloc, its new mechanically bonded fabric. The fabric is made of man-made fibers and is bonded by a technique that entirely eliminates the normal felting process. The new fabric is slated for a wide variety of applications.

The company offers Fiberloc in Dacron, Orlon, nylon, viscose, acetate, Arnel, polypropylene, or in combinations. The fabric comes in widths up to 108 inches and in thicknesses up to one inch. It's available in rolls, sheets, or in precision-cut parts and shapes.

Foam Plus Vinyl

Reeves Bros. is now laminating Curon polyester foam to a 15-gage vinyl sheeting and is offering it as a new type of thermal insulation material. The sheeting is available in 4 x 12-ft. sheets.

The new insulation is primarily intended for outdoor and indoor use on chemical and oil-storage tanks and processing equipment. It's recommended for surface temperatures ranging from 50 to 250 F.

The insulating K-factor of the foam is 0.25 at 32 F., or 0.38 at 250 F. When a customer requires higher or lower insulation factors, the standard thickness of the sheets of 1 inch can be changed.

The vinyl sheeting provides a completely weather-resistant surface that can be cleaned easily. The foam material maintains its insulating properties better than more hygroscopic materials because it has no affinity to water and poor capillary attraction to moisture.

Cotton Gets Boost

The National Cotton Council has given another boost to the development of fast, accurate methods of cotton-quality evaluation. It has signed a cooperative agreement with the Tennessee Agricultural Experiment Station in Knoxville by which it will provide the station with $11,500 for basic research on fiber length and length distribution.

The major goals of the project are: to analyze specimens prepared for commercial length testing to determine if they accurately represent the sample from which they were drawn; and to develop scientific methods for preparing and checking specimens suitable for cotton-fiber length.

Jacquards Score

Burlington House reports excellent reception to its jacquard upholstery fabrics that were introduced in January. The group represents the company's first offerings in all-nylon. Caprolan is the fiber that is used.

The new jacquard fabrics are a combination of continuous-filament, nylon and spun nylon. The introductory line includes three designs in eleven colors.

More Flexible

Aldan Rubber Co. has developed a new, improved hospital sheeting made of Neoprene-coated Dacron. It's durable and lightweight.

The sheeting has many advantages over standard hospital sheeting—it's more flexible and has a more pleasant hand. It's thinner, too. Therefore, it can be folded easier and more compactly.

No Shed, No Pill

Pepperell Mfg. Co. has developed a new protective finish called Nap-Guard. The company has applied for a patent.

The new finish eliminates shedding and pilling—before and after washing—of its 100% Acrilan and rayon blends.

The finish, which is completely insoluble in water and drycleaning liquids, changes the rayon fibers from hygroscopic to hydrophobic fibers.

The company's Park Lane blanket, a rayon blend, is treated with the finish. This blanket retails for $5.95.

WE'RE ADDING A NEW CHAPTER TO THE STORY OF KNITTING

You just can't know all about the knitting industry unless you are aware of the important chapter that Creslan® acrylic fiber is adding to the story. Learn this story—get all the facts at the Creslan Theatre, Booth No. 751 Knitting Arts Exhibition.

DYEABILITY *new action pictures showing the fiber-penetrating dyeability of Creslan, as seen by the famous Microdyeoscope.* **TEXTURE** *the many faces of Creslan—variety of surface interests in fabrics for home furnishings, men's apparel and women's apparel.* **YARNS** *many interesting developments —see the wide range of yarn effects that can be achieved.* **FABRICS & GARMENTS** *jerseys, double-knits, ratiné, raschel knits—all knits are hits in Creslan. Creslan is a product of American Cyanamid Company, New York.*

CYANAMID

Creslan®

ACRYLIC FIBER

Offices: 111 West 40th Street, New York; 3333 Wilkinson Boulevard, Charlotte, N. C.; 2300 South Eastern Avenue, Los Angeles, Calif.; 40 Fountain Street, Providence, R. I.

Went out on a limb for the wrong fiber

In an effort to promote some of the 125 or more textile-fiber names and trademarks, a number of very tempting offers are being made. Take care! You can really lose your shirt on the wrong fiber . . . but when you sell merchandise made with Du Pont fibers, you're offering trademarks that customers know, trust, prefer. (Fact: a Du Pont fiber is now used in one out of every two sweaters.) And this preference keeps growing, with a strong assist from Du Pont's powerful advertising program, including THE DU PONT SHOW WITH JUNE ALLYSON. So don't gamble. Don't go out on a limb. Feature Du Pont trademarks in your ads, on your labels, in your selling plans.

GET A SELLING EDGE WITH DU PONT NYLON "ORLON"* "DACRON"**

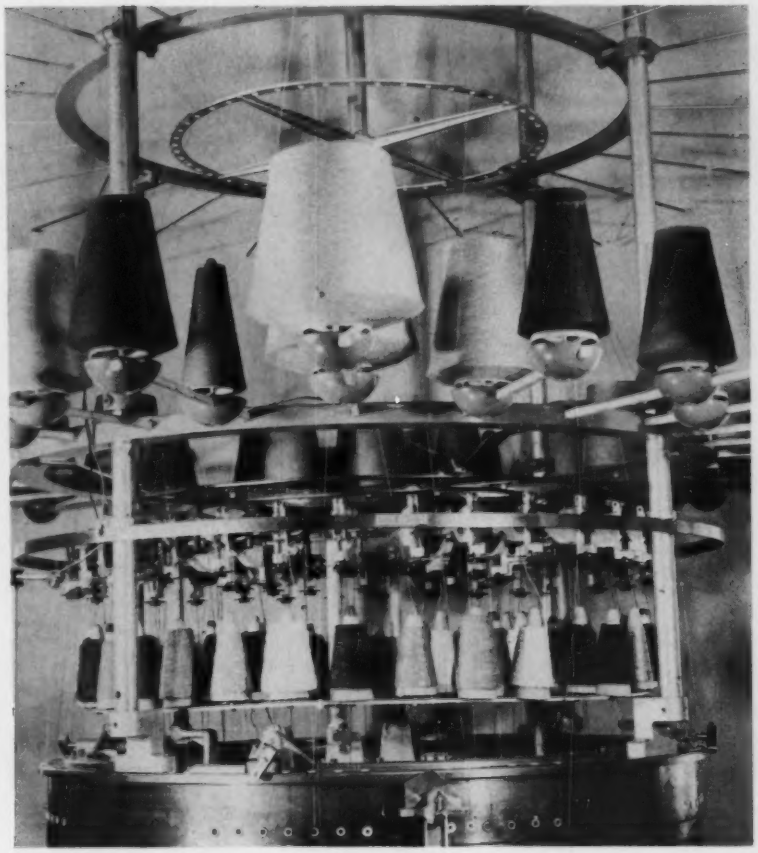
ACRYLIC FIBER — POLYESTER FIBER

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY — DU PONT

Enjoy THE DU PONT SHOW WITH JUNE ALLYSON, Monday nights on CBS-TV. *Du Pont's registered trademark for its acrylic fiber. **Du Pont's registered trademark for its polyester fiber.

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

Knitting With A Woven Look

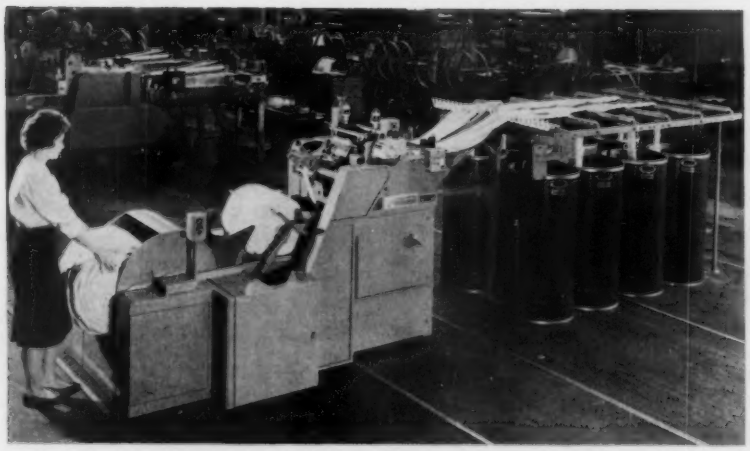


This knitting machine, by Scott & Williams, Inc., knits jersey-type fabric with horizontal and vertical patterns. The design of both wale and course stripping is operated independently by pattern chains.

The machine has 32 feeds, a 26-in.-dia. cylinder, and is 18-cut. Unit has a sinker top, stationary-cylinder with needle selection by a 3-position pattern wheel. Designed with 4-finger stripping boxes and conventional stop-motions, the heart of the unit is a special superstructure for introducing pattern yarns to groups of selected needles. This wrap mechanism introduces a wrap yarn to one or all needles from a single yarn source. Each wrap yarn has individual stop-motions for better control.

Any type of yarn (natural, man-made, or nub) can be knitted on the LPW machine. Designs are practically unlimited because course and wale patterning are introduced independently. **(Circle E-1 on Reader-Service Card)**

Now—Here's Automatic Ball-Doffing



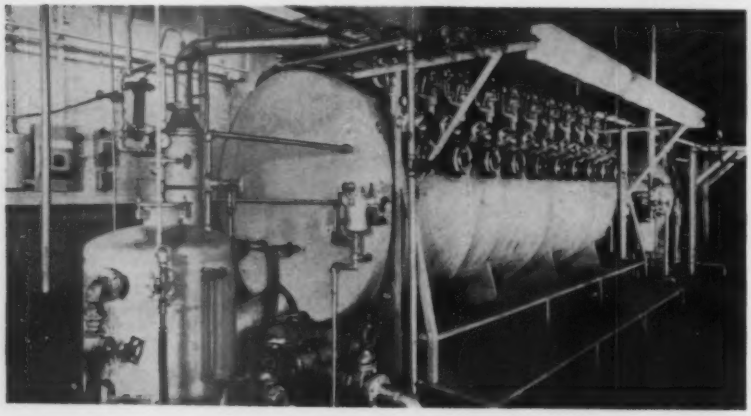
This automatic doffer, developed by Warner & Swasey Co., is a self-contained unit for use with a Pin Drafter. Machine winds, doffs, and resumes winding of a new ball in less than 12 seconds without operator assistance. Results: higher machine efficiency and less downtime.

The ball-doffer handles 18x24-in. balls weighing up to 50 pounds. It's powered by a ½-hp. motor, which is synchronized with the Pin Drafter's main-drive motor.

The machine is relatively simple in design and engineered for easy maintenance. **(Circle E-2 on Reader-Service Card)**

. . . Turn the page

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



Dyeing Polyester-Wool Blends

Jet-dyeing machine, developed jointly by Gaston County Dyeing Machine Co. and Burlington Industries, Inc., has many advantages over beck dyeing. Polyester-wool blends can be dyed at 230 to 240 F.

This unit is the result of three years of research and development by the two firms. It will be shown publicly for the first time at the Knitting Arts Exhibition in Atlantic City, N. J.

Dyeings can be made at temperatures above or below the boiling point, as desired. With certain man-made fibers and blends (such as polyester-wool) less chemical carriers are required. The unit uses a low dye-liquor ratio of 10:1. A uniform temperature and dyebath volume is maintained by controlled heating and cooling.

Reels or drives, which chafe fabric strands, are eliminated. The fabric moves by jet action and dye-liquor flow. Result: level dyeing with no side-to-side shading, complete dye exhaustion, uniform fabric shrinkage, dark shades dyed more easily, improved color fastness, and brighter shades. **(Circle E-3 on Reader-Service Card)**

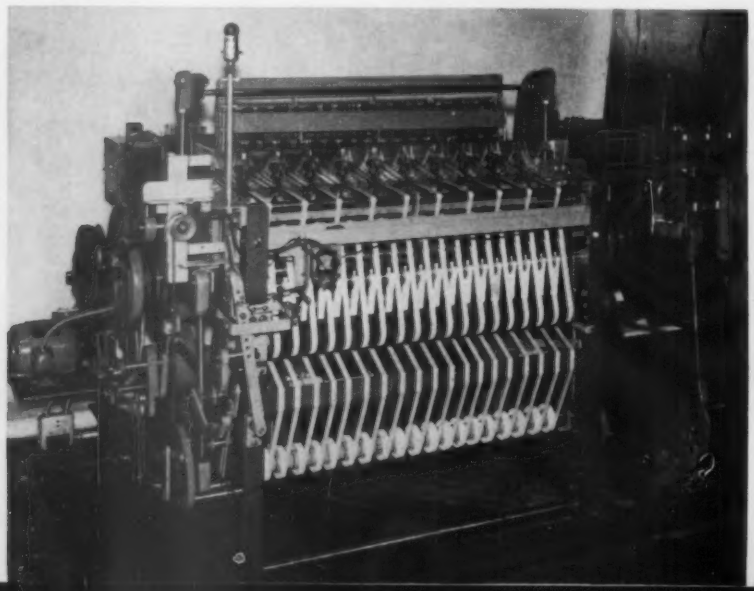
Versatility in Tape Weaving

Narrow-fabric loom, developed by Bowers & Associates, Inc., is made of prefabricated steel. Unit is only 47 inches high.

Twenty ⅝-in. tapes can be woven at one time. By changing battens and using fewer shuttles, much wider tapes can be made. Loom operates at 200 to 250 ppm.

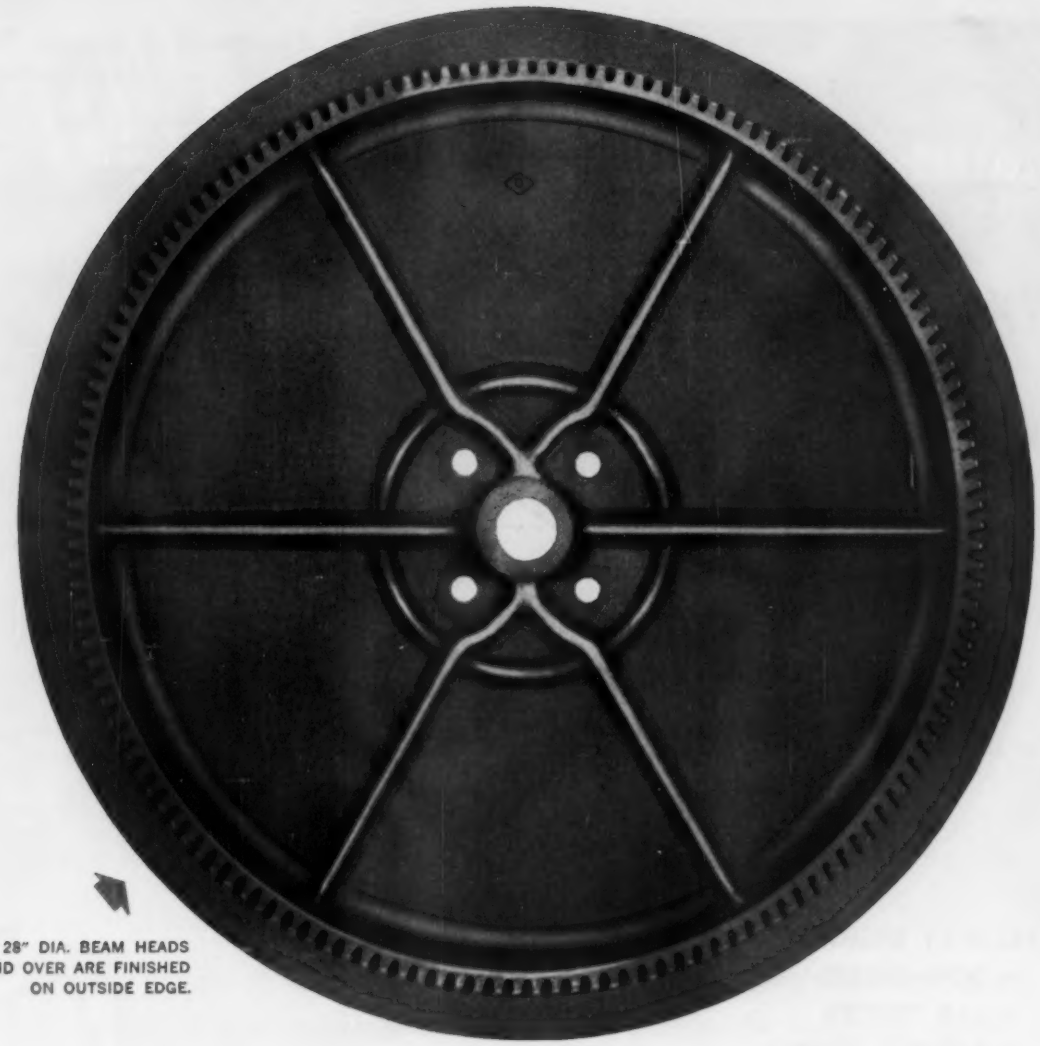
It has automatic stop motions for both warp and filling with a red signal light. Warp beam is 33 inches wide and comes with heads up to 30 inches in diameter.

The loom has 12 harnesses but it weaves a 4-harness pattern. Unit uses a ½-hp. motor. **(Circle E-4 on Reader-Service Card)**



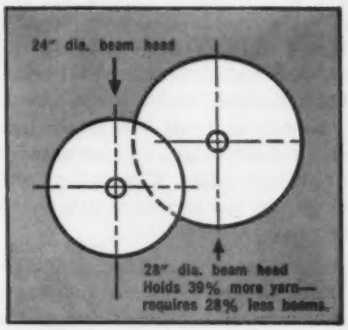
E-5—Helical pitching device makes adjusting print-roll registration simpler. The control unit is positioned between the drive wheel and the pinion gear on the print-roll shaft. All gears are in constant mesh at all times. When the operator turns a handwheel (at the end of the pitching device) the print-roll register is adjusted either forward or backward (1 mm. for each turn of the wheel). This adjustment can be made while the printing machine is operating. Each printing roller must be fitted with the control unit. Mather & Platt Ltd.

E-6—Wrinkle-recovery tester uses a standard microtorque potentiometer. Potentiometer operates through a counterbalanced feeler that puts 0.5-gram weight on the fabric. Fabric is mounted on a turntable that rotates at 0.5 rpm. The electrical output of the potentiometer is permanently recorded on an oscillograph. Resolution of the instrument is 0.003 inch. Western Regional Research Laboratory.



28" DIA. BEAM HEADS AND OVER ARE FINISHED ON OUTSIDE EDGE.

GREATER MILL SAVINGS POSSIBLE WITH LARGER LOOM BEAM HEADS



Insure these savings by specifying Draper Beam Heads. Made from laboratory-controlled materials, with accurate foundry casting and precision machining, top quality Draper Beam Heads protect your changeover investment. Your Draper representative will be glad to investigate the savings you can realize through replacing with larger beam heads.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

New!

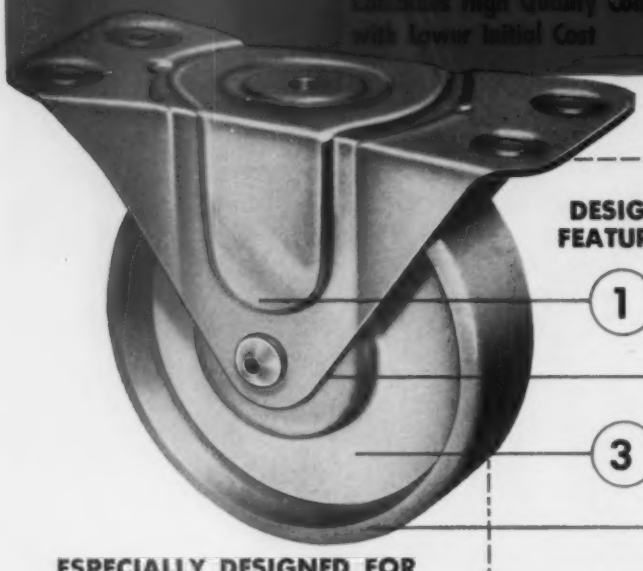
NOELTING

Faultless Casters

Faultless Textile Casters

500 SERIES • LIGHT DUTY

Combines High Quality Construction with Lower Initial Cost



ESPECIALLY DESIGNED FOR

- **DOFF BOXES**
- **LAP TRUCKS**
- **ROVING TRUCKS**

Here, in this new Faultless 500 Series Textile Caster all of the features textile men require—deep drawn thread guards and lower initial cost—are combined to give a rigid caster that assures freedom from snagged threads that stop production. Sealed wheel bearings available if desired. Load capacity 175 lbs.

Faultless castered equipment can lead the way to reduced costs and increased production in your own plant. Casters for light, medium, heavy and special duties are included in the extensive Faultless line.

1 Drawn steel construction deeply corrugated to carry maximum rated loads with a substantial safety margin.

2 Ball bearing assembly in hub to absorb side thrust.

3 Deep drawn thread guards fit snugly between wheel hub and caster horn — assure maximum protection, trouble-free operation.

4 Semi-steel wheel has fully machined face with generous radii at tread edge.

ASK YOUR DISTRIBUTOR

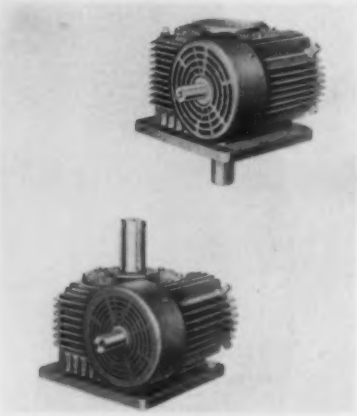
Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. He and one of the strategically located Faultless Sales Engineers are available to work with you on every handling problem in your plant. Both are listed in the Yellow Pages of your phone book under "Casters," beneath the Faultless heading. Write for complete information.

Faultless Caster Corporation

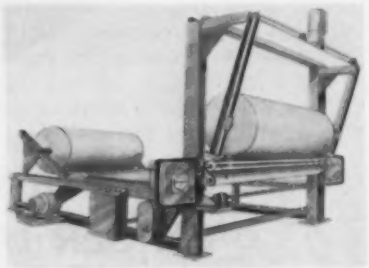
Equipment & Supply News

. . . *Begins on page 143*

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



E-7—Speed reducer, worm-gear type, comes in nine sizes, ranging from 3- to 12-in. center distances. Ratios extend from 4½:1 to 95:1. These units are rated from fractional to 175 hp. All gearshaft bearings are grease lubricated. Cleveland Worm & Gear Div.

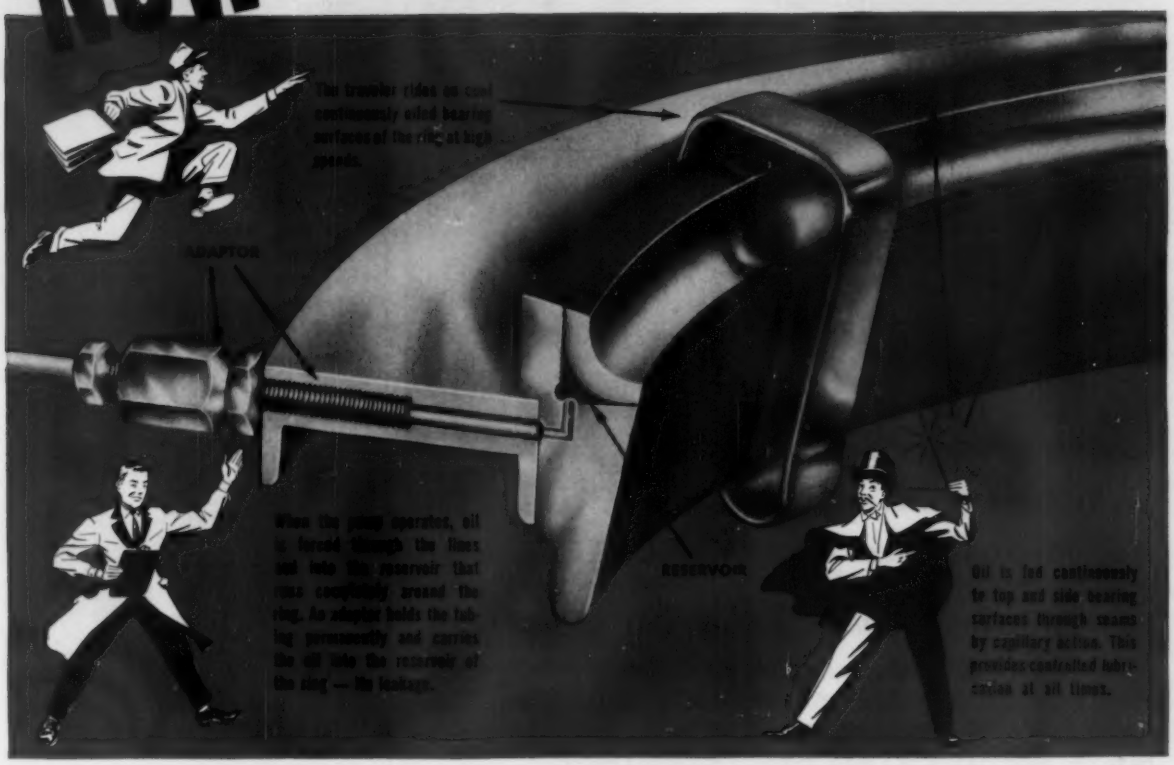


E-8—Paring machine takes a log of synthetic foam and cuts it into continuous thin sheets (much the same as wood veneer is shaved from a log). The foam can be cut as thin as $\frac{1}{16}$ inch. Foam sheets are used for fabric and rug backing. Falls Engineering & Machine Co.

E-9—Latex backing for upholstery fabrics has been designed to take-up the dye used on the fabric. The complete line of backing compounds receives the dye so that the backing is the same color as the face of the fabric. General Latex & Chemical Corp.

. . . *Turn to page 148*

NOW Controlled, Automatic Pressure Lubrication Ideal When Used on "M" Type HERR Conical Rings!


The traveler rides on cool continuously oiled bearing surfaces of the ring at high speeds.
ADAPTOR
When the pump operates, oil is forced through the lines and into the reservoir that runs completely around the ring. An adaptor holds the tubing permanently and carries the oil into the reservoir of the ring — No leakage.
RESERVOIR
Oil is fed continuously to top and side bearing surfaces through seams by capillary action. This provides controlled lubrication at all times.

Each stroke of the oil pump piston is timed to provide the minimum amount of oil to lubricate the path of the traveler. No excess or waste!

RESULTS:

1. Cooler operation of Ring and Traveler.
2. Provides longer traveler life.
3. Uniform tension of the yarn at all times due to adequate lubrication of the traveler.
4. Positive assurance of correct oil supply.
5. Faster operation possible.
6. Less ends-down.
7. Oil waste eliminated.
8. No oilcans, no dripping, no overfilling. No labor or supervision required.
9. Keeps costs down.

Always a step ahead, Herr "M" Type Rings are now designed for pressure lubrication from a centralized lubrication system. Oil cups have been eliminated. The oil is introduced through newly designed adapters directly to the annular supply reservoir. (This reservoir runs completely around the ring.) From this reservoir the oil moves continuously by capillary action through the top and side seams. This controlled lubrication assures just the right amount of oil to the traveler. Controlled lubrication because of the special design of Herr "M" Type Rings is entirely self contained. There is no excessive oil, no waste — no overflow of oil to coat other parts of the machine. It is clean lubrication insuring clean yarn without increased maintenance.

Write for complete information.

HERR MANUFACTURING CO., INC.
309 FRANKLIN STREET • BUFFALO 2, N. Y.

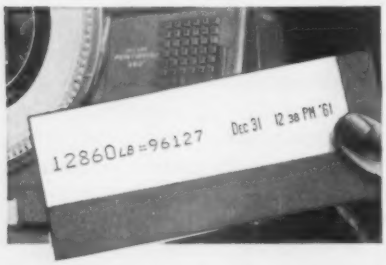
FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

...When Management Puts The Spotlight on WEIGHING

PRINTWEIGH® RECORDS: a Major Cost Control Tool

Materials become money . . . on your scales. Weight records directly affect costs, quality control, inventories and customer billing. That's why it pays to put the spotlight on weighing . . . and make sure you have the right TOLEDO scale at every weighing point.

A close look at weighing is especially called for if you've made changes in plant layout, materials handling methods, or inventory controls. In any of these areas, scales that don't fit the job can bottleneck operations, infect weight records with costly errors.



Complete Printed Weight Records with TOLEDO PRINTWEIGH "400"

Prints complete weight records on tickets, sheets or strips. Transmits weight data to remote locations where it is recorded by office machines, if desired. Ask for Bulletin 2017.

We'll be glad to help you evaluate weighing efficiency in your operations. A few minutes at each weighing station will put the spotlight on scale capacity and location, dial visibility, platform size and height and other important factors. Send for Bulletin 2036. TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.

(Toledo Scale Co. of Canada Ltd., Windsor, Ont.)

SERVICE Factory-Trained 300 Cities

TOLEDO®

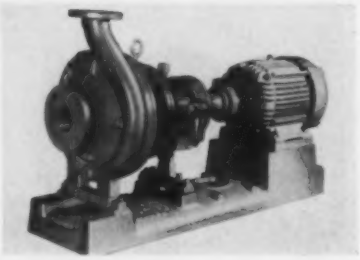
Headquarters for Weighing Systems

Equipment & Supply News

. . . *Begins on page* 143

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

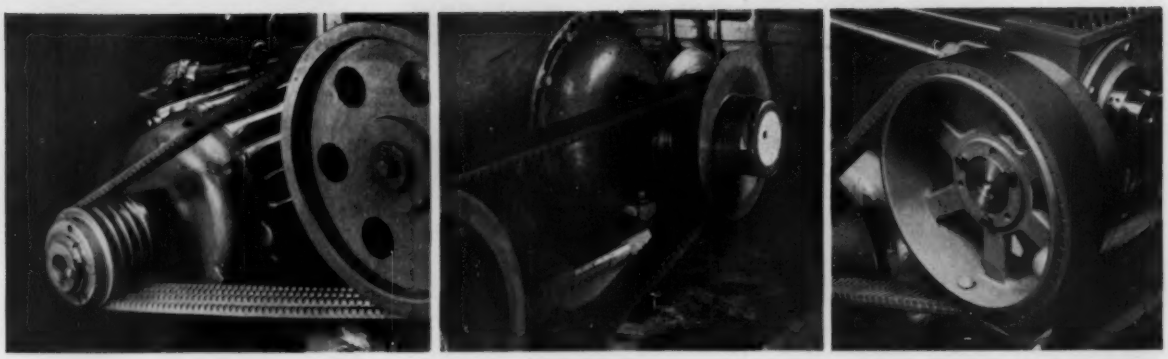
E-10—Strapping tool for steel straps is air powered. Unit performs the complete strapping operation—engages the feed wheel, tensions the strapping, applies the seal, cuts the strap, and disengages the feed wheel. This tool weighs 22 pounds. Tension is adjustable to 1,200 pounds at 90 psi. Special high-tension units are available for 1600-lb. tension. Signode Steel Strapping Co.



E-11—Centrifugal pump is designed for maximum interchangeability of parts. The unit handles corrosive or abrasive chemicals, hot or cold (—350 to 500 F.). Capacities go up to 775 gpm. and heads up to 300 feet. The pump has a centerline discharge. All pumps in the line have the same length, 23 inches; same size coupling, 1⅛ inches; and same size discharge, 4 inches. The pump has a back-pull-out design for easy replacement of parts. Units come in ductile iron, Type-316 stainless steel, or Gould-A-Loy 20. Goulds Pumps, Inc.

E-12—Softening agent, non-ionic type, works on man-made knitted or woven fabrics. This product, called Softener 4, has excellent non-yellowing and gas-fading properties. It can be used alone or in combinations with other finishes. The softener is not affected by normal drying temperatures. It works on knitted and woven elastic fabrics that have been bleached, dyed, or printed. Fancourt Co.

. . . *Turn to page* 150



Wood's specialization provides the right drive to solve your belted transmission problems . . .

. . . particularly if your problems involve horsepower, high, low or variable speeds, drive efficiency, space, economy or availability.

This is because Wood's people are specialists in the production, selection and application of *all* basic types of belted drives.

We are able to provide the *right* drive for a specific application because we manufacture all of the basic types. So, drive problems can be solved by Wood's fast and economically.

To the breadth of Wood's belted power transmission line, add depth of engineering and manufacturing experience (104 years, to be specific). This depth of experience is another element of specialization that enables Wood's to offer not only unique product advantages, but consistently high performance as well.

This is Wood's stock in trade . . . supplying the *right* answers to belted power transmission problems from a broad line of Ultra-V Drives . . . Variable Speed Drives (Motion and Stationary Control) . . . Timing Belt Drives . . . Flat Belt Drives.

Send for your copy of BULLETIN 23103.

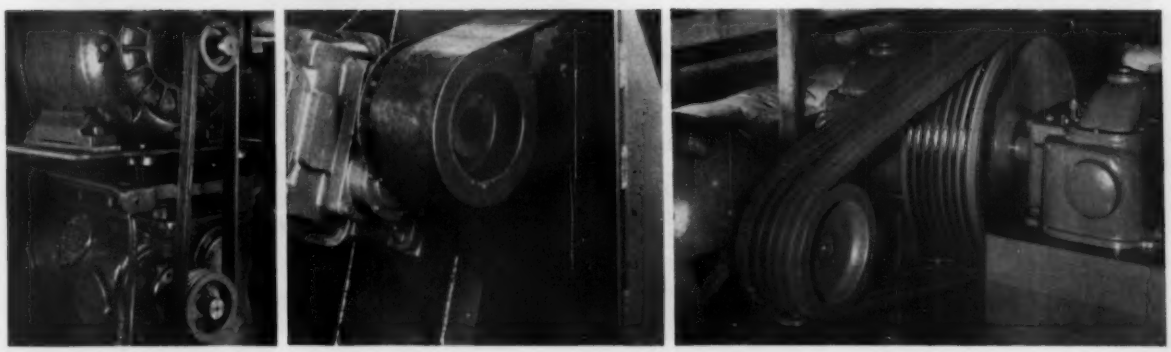
Woods

T. B. WOOD'S SONS COMPANY

CHAMBERSBURG, PENNSYLVANIA

ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS

BT/161



CIRCLE 149 ON READER SERVICE CARD

Time was when relocating mill machinery was a costly, major operation. But no more!

With a Unisorb mounting program you can position looms for greatest efficiency today and relocate as often as desired as conditions change — at lowest possible costs. You can save up to 80% on installation time . . . save on lag bolts and screws (not needed), save floors from damage (drilling is not required).

Unisorb reduces transmitted vibration and noise up to 85% — also muffles induced external vibration.

Unisorb vibration-protected looms can be run at maximum speeds, help you realize full production potential.

Unisorb vibration and noise-protected workers do a better job, are less subject to fatigue.

Unisorb keeps machines on the level — wear and tear on moving parts is reduced. One textile mill reports, "Unisorb keeps the rolls of the machine in better alignment. The spinning frame also runs better."

Available in many densities and thicknesses for textile machine mounting. Look for the distinctive red center. For data on loading ranges and specific applications, ask your Unisorb Distributor or write direct.

UNISORB Distributed by INDUSTRIAL SUPPLY CO., CLINTON, S. C. TEXTILE SUPPLY CO., DALLAS, TEXAS

UNISORB 215 SOUTH STREET, BOSTON 11, MASSACHUSETTS
Division of THE FELTERS COMPANY

New York, N. Y. • Chicago, Ill. • Detroit, Mich. • Upper Darby, Penna. • St. Louis, Mo. • Taylor Felt & Supply Co., San Francisco, Calif. • Acorn Mfg. Co., Lynwood, Calif.

Please send me a Unisorb Sample and Free Book

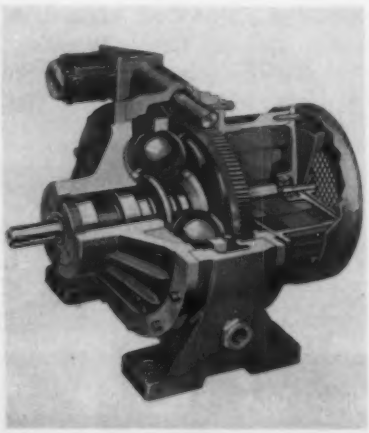
Name.....
Company.....
Address.....
City.....Zone.....State.....

Equipment & Supply News

. . . *Begins on page* 143

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-13—Bobbin barrels made of laminated plastic now come in colors. The colors (natural, red, green, yellow, blue, and black) are part of the plastic material, which eliminates the need for painting rings on the bobbins for identification. The color will not bleed or wear off. Bobbin barrels are available in paper base or cotton fabric base grades. Sizes are made to specification. Taylor Fibre Co.



E-14—Variable-speed drive and pancake-style motor come as one unit. Sizes range from ⅓ to 15 hp. Speed settings can be reproduced. The variable output speeds have a 9:1 and 6:1 ratio. Adjustment can be made while operating under load. Cleveland Worm & Gear Div.

. . . *Turn to page* 152

NEW Butterfly Valve!

MATCHLESS LUNKENHEIMER QUALITY

FIG. 4026N

Complete Valve with Ends on Casting. 2"-6". Screwed End.

FIG. 4150N

(Rubber-Lined: Fig. 4151R) Valve Elements Only. 2"-18". Screwed, Welded, Grooved, or Flanged Ends Supplied Separately to Fit Your Pipe Connections

W. P. 150 psi.

- QUICK OPENING
- POSITIVE CLOSURE
- NICKEL-PLATED CAST IRON
- STAINLESS STEEL TRIM
- "O" RING SEALS

New Lunkenheimer Butterfly Valves are compact and lightweight, easy to install on any line in a fraction of the space required by standard gate or plug valves. A quarter-turn of the stem opens the disc full or closes it tight. No lubrication is required, and "O" Ring seals provide positive shut-off in either vacuum or pressure service. These new Butterfly Valves are made to traditional Lunkenheimer standards of quality. WRITE for new Catalog 613 or call your Lunkenheimer distributor today for full information on the new Lunkenheimer Butterfly Valve line . . . available now for immediate delivery.

L-261-21

LUNKENHEIMER®

THE STANDARD of Excellence

NEW from FLETCHER

HIGHEST SPEED NOVELTY YARN TWISTER EVER MADE

This Novelty Yarn Twister, which operates at a speed of 5,000 to 9,000 RPM, depending on the type of yarn used, is a Fletcher achievement in engineering that speeds your production.

Sizes range from 13-foot, 20-spindle model up to 33-foot, 100-spindle model.

Dual feature—this machine not only twists yarn but serves as a high speed doubler twister. It does standard twisting up to 8 ends.

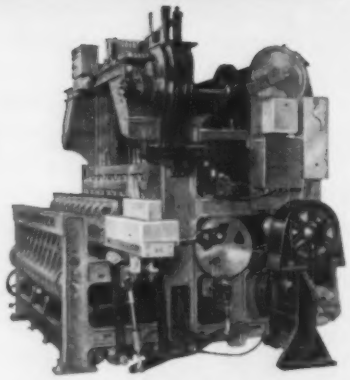
TRY BEFORE YOU BUY with 3-month trial rental plan

Get proof before you pay by evaluating these machines in your own plant. They are available for delivery, completely assembled. See them in operation in the Fletcher Industries Showrooms in Cheltenham, (Philadelphia) Pa.

for Elastic Webbing, Glass, Synthetic, Light or Heavy Cotton Fabrics.

FLETCHER High Speed POWER-FAB ELASTIC WEB LOOM

Uses less floor area. Maximum production per square foot. Increased operator work load. Greater variety on same machine with minimum of changes.



FLETCHER INDUSTRIES

Hasbrook Avenue and Beecher St., Cheltenham, Pa.

FLETCHER SOUTHERN
SOUTHERN PINES, N. C.

FLETCHER INDUSTRIES
STATESVILLE, N. C.

Equipment & Supply News

. . . *Begins on page 143*

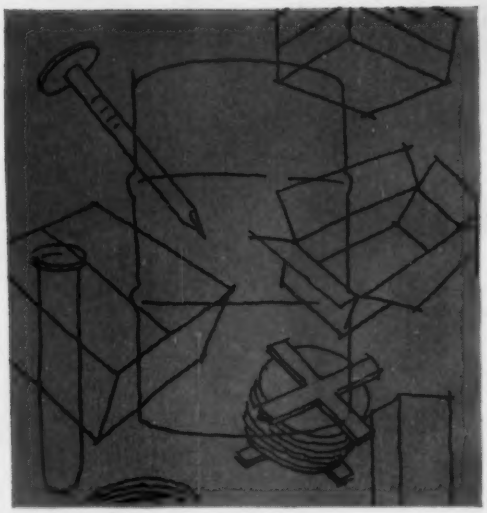
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-15—Gasket compound works on all industrial fluids including water, steam, and mild corrosives. It can be used to repair broken gaskets; for building up damaged, misaligned, or warped flanged surfaces; or as a gasket substitute where surfaces permit. Two types of gasket compound are available—soft-set for connections that must be disassembled and hard-set for permanent installations. Crane Packing Co.

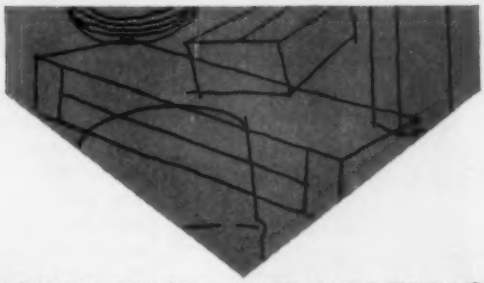
E-16—Lint collector, called Lint-A-Maze, handles air flow from 7,000 to 150,000 cfm. The unit features low-pressure drop and high arresting efficiency at velocities of 250 to 1900 fpm. Lint, chaff, feathers, and similar wet or dry materials can be removed. A built-in powered sweeper brush continuously removes the collected material and deposits it in a hopper for manual or automatic collection. Standard models range from 2 feet, 10 inches wide by 4 feet, 1 inch high to 21 feet, ¼ inch wide by 10 feet, 3 inches high. Air-Maze Div.

E-17—Bench drawers work as modular units for flexibility of use. Each drawer is mounted in its own case. The drawers run on ball bearings. They come with a sliding tray for small parts. Designed with a hasp or cylinder lock, the drawer is 20 inches long by 5 inches high, and is available in either 14 or 20 inch widths. Construction is all steel in gray baked enamel. Bay Products, Inc.

. . . *Turn to page 154*



NOW! "CHECK WEIGHING" CAN BE MORE ACCURATE...MORE ECONOMICAL!



FAIRBANKS-MORSE BENCH AND PORTABLE "FLOAXIAL" DIAL SCALES

Now you can "check weigh" anything for industry (from a one-pound can to a one-ton barrel), in, out, or all about more accurately—more economically! Modern Fairbanks-Morse Dial Scales provide proved accuracy that works for you, year after year. And—because our Scales are built to last longer, you realize long-life economy . . . freedom from repairs or early replacements!

PROVED ACCURACY! Our "Floaxial" Dial Scales are famous for proved accuracy! Exclusive "Floaxial" mechanism eliminates knife edge or pin point pivots, features hard bronze fully adjustable cams, full-floating pendulums. Shielded ball bearings and corrosion resistant working parts assure free movement.

EASIER TO USE! Easy to use and move. Dial head swivels full 360° to any position. Rubber-tired wheels lock and/or Dial mechanism locks. Cast aluminum construction cuts weight.

EASY TO READ! Red knife blade indicator picks out just one scale graduation at a time. Special indicator tip eliminates parallax. Black numerals on brushed aluminum dial. No paint to peel, crack, or craze.

LONG-LIFE SERVICE! Rugged lever systems take shocks of dropping loads and stay accurate! Pivots are hardened steel with precision ground knife edges.

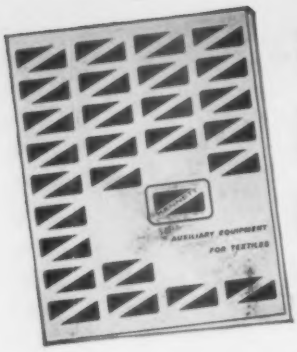
CAPACITIES: BENCH AND PORTABLE DIAL SCALES: Available in capacities from 50-3200 lbs.

3 PLATFORM SIZES: 18" x 20", 21" x 29", 30" x 30" available for both Bench and Portable Dial Scales.

For further information, write: **C. G. Gehringer; Scale Division; Fairbanks, Morse & Co.; 19-01 Route 208; Fair Lawn, New Jersey.**

FAIRBANKS MORSE
A MAJOR INDUSTRIAL COMPONENT OF
FAIRBANKS WHITNEY

CIRCLE 153 ON READER SERVICE CARD



THIS NEW MATERIALS HANDLING BOOKLET...

SHOWS ALL...
the rugged Kennett trucks, cans and receptacles designed specifically for textile mill operations.

TELLS WHY...
an unusual combination of Vulcanized Fibre properties has made Kennett Receptacles the traditional choice of cost-minded textile men everywhere . . . Kennett equipment performs for years!

EXPLAINS HOW...
this versatile receptacle line improves materials handling efficiency . . . caters to costs.

REQUEST IT!
Use the convenient reader service card in this magazine or write the company direct. Address Dept. BB-4.

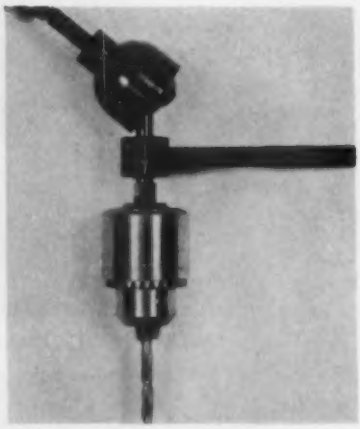
See National at Knitting Arts Show
Atlantic City—Booth No. 920

NVF

KENNETT DIVISION
NATIONAL VULCANIZED FIBRE COMPANY
WILMINGTON 99, DELAWARE
In Canada: NATIONAL FIBRE CO. OF CANADA, LTD., TORONTO 3, ONTARIO

Equipment & Supply News

. . . *Begins on page* 143



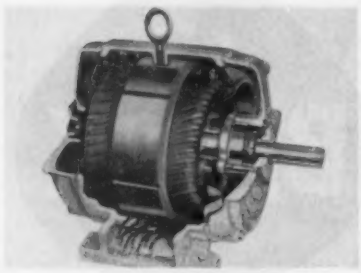
E-18—Drive converts a power drill into a variable-angle tool. This unit, called Gyro-Drive, fits any ¼- or ½-in. drill. It permits drilling at any angle up to 52 degrees. A removable hand-grip bar is used for extra pressure or control. Glenwood Gyro-Drive, Inc.

E-19—Fugitive tint, called Tint-Out, works on Dacron and cotton blends. This tint is not affected by heat setting, warp sizes, or chemicals found in the dyehouse. The tint is completely removed by scouring in hot or cold water. Chemtel Corp.

E-20—Numbering device for label-printing machine prints consecutive numbers. It comes with up to seven digit wheels in roman- or gothic-type face. This unit prints labels from ¾x2 up to 6x6 inches. Unit uses 9x20 table space. Weber Marking Systems.

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-21—Waste-disposal system cuts plant maintenance cost. This unit takes paper or cardboard, converts it to a fine compact pulp, and discharges it into a haul-away container. Unit will also handle glass or plastic. The pulp has only 1/5 the volume of the original waste. Waste travels by conveyor to a wet grinding tank. After grinding, the slurry is pumped to an extractor. Water goes back to the grinder and dry pulp is ejected into a truck or haul-away container. The entire operation is automatic. Wandel Machine Co., Inc.

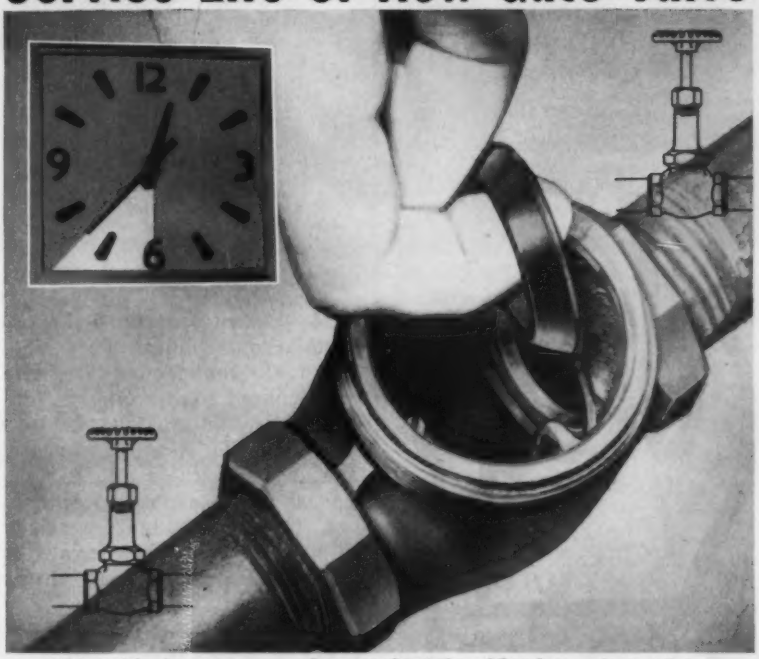


E-22—Induction motor features encapsulated winding for protection against moisture, chemicals, oil, and abrasives. The wound stators use a plastic resin that completely seals the end coils. It also fills in the stator slots. Louis Allis Co.

E-23—Butterfly valve, rated for 150 psi., comes in pipe sizes ranging from 2 to 18 inches. These units have nickel-plated cast iron or cast steel bodies with stainless-steel trim. For special uses, valve comes with rubber or ceramic lining, and Monel trim. In the full range, the valve is a separate element with interchangeable bolt-on flanges for screw, weld, flange, or groove installations. In diameters up to 6 inches, the valve may be obtained as an integral unit. These valves open and close in a quarter turn. Lunkenheimer Co.

. . . *Turn the page*

Only 7 to 10 Minutes to Renew Service Life of New Gate Valve



Patented development assures replacement of seat ring while valve remains installed.

Without removing the valve body from the line, you replace the nickel-alloy seat rings in Fairbanks new patented Renewable Seat Ring Gate Valves. In 7 to 10 minutes, from the time the line is shut down until it is put back into operation, you have given a new service life, a new life of dependable tight closure to your valve.

Just 7 to 10 minutes of your maintenance man's time — only 7 to 10 minutes of "down-time" on your steam, water or process piping lines — and you have the equivalent of a new valve in the line. Think of the savings: where once at least one hour, under the most ideal conditions, was required to replace a gate valve in the line, the job is now accomplished in from 7 to 10 minutes.

Field tested for over two years, under all conditions from steam to corrosive liquids, the revolutionary new Fairbanks Renewable Seat Ring Bronze Gate Valve has proven completely satisfactory — absolutely dependable.

Made with either rising stem or non-rising stem construction in ½",¾",1", 1¼", 1½" and 2" sizes, the Fairbanks Renewable Seat Ring Bronze Gate Valves are recommended for severe service conditions on 200 lb. steam pressure at 550 degrees F., 400 lb. water, oil or gas pressure — non-shock — lines requiring full flow and subject to frequent operation. Nickel alloy seat rings and wedge make the valves particularly tough and corrosion resistant.

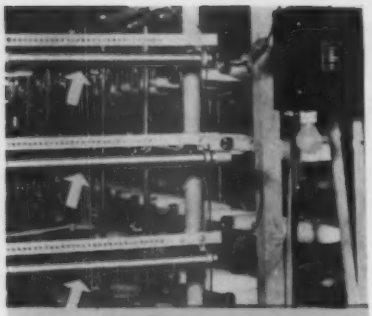
YOURS ON REQUEST: Illustrated, descriptive folder gives complete information on Fairbanks Renewable Seat Ring Gate Valve with details and specifications. Yours without charge. Write today.

1. Union Bonnet removed. Retaining screw loosened with ordinary screwdriver.

2. Finger hooks inside nickel alloy seat ring. Seat ring lifts out of valve body.

3. New seat ring is inserted. Retaining screw tightened. Bonnet replaced.

THE **Fairbanks** COMPANY
393 Lafayette Street, New York 3, N. Y.
Branches:
New York 3 • Boston 10 • Pittsburgh 22 • Rome, Ga.
Valves • Trucks • Casters • Wheels • Dart & "PIC" Unions



STATIC in your CREELS?

With the perfection of the Simco "Midget", there is no longer any reason to endure the problems of static slowdown in your creels. This electronic neutralizer is *unconditionally guaranteed* to end ballooning, or even the opening of zero-twist yarns. Shown above are three "Midget" static bars, mounted at the stop-motions, safely and effectively permitting static-free operation. Why not write for facts?

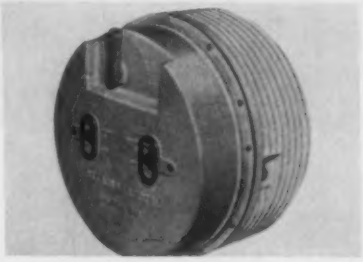
Simco is America's largest manufacturer of anti-static equipment for *all* machines.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

Equipment & Supply News

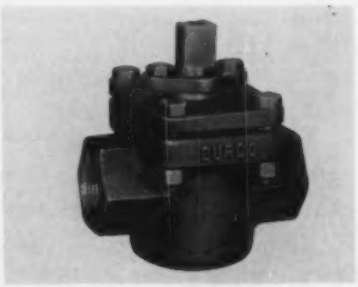
. . . *Begins on page* 143

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



E-24—Electro-magnetic brake operates at torque ratings of 500, 750, and 1,000 foot-pounds. Designed with unitized construction, the operating mechanism is attached to a single plate for easy maintenance. The unit operates on a.c. It has a manual release-automatic reset control. This magnetic brake works on all standard motor-shaft lengths or can accommodate through shafts. Stearns Electric Corp.

E-25—Fork lift truck has a capacity of 3 tons. The unit is pneumatic tired and equipped with power steering. It is gasoline powered with a 12-v. electrical system. Turning radius is 28 inches. Oil and gas tanks are part of the frame. Truck-Man Lift Trucks.



E-26—Plug valve for corrosive chemicals uses a Teflon sleeve that serves as a lubricant and sealing medium. There is no metal-to-metal contact of moving parts. Adjustments for sleeve wear can be made without removing the valve from the line. Valve size goes from ¼ inch through 6 inches. Units are available in ductile iron, carbon steel, Type-316 stainless steel; Monel, and Durimet 20. Duriron Co., Inc.

. . . *Turn to page* 158

Preferred by the experts

. . . the best **BLACK**
. . . the deep **BLACK**
. . . the clean **BLACK**
. . . the uniform **BLACK**
. . . the low-cost **BLACK**
. . . the fast **BLACK**
. . . the simple dyeing method for nylon, silk, and wool
. . . use Hematine from Jamaica.

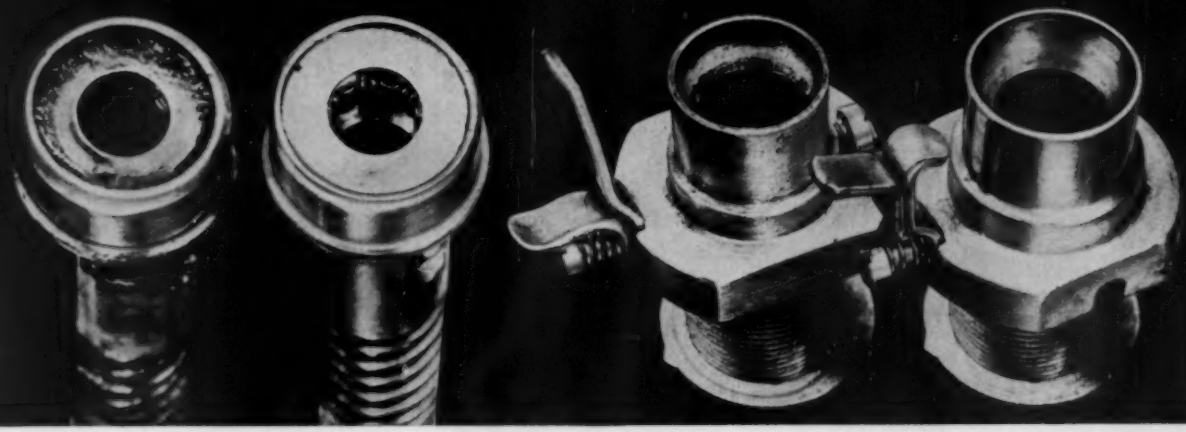
Available in powder, crystal, or liquid. Write for detailed information.

U.S. Distributor

AMERICAN DYEWOOD CO., INC.
374 MAIN ST., BELLEVILLE, N. J.

The West Indies Chemical Works, Ltd.
70 Wall St., New York 5, N. Y.

CIRCLE 252 ON READER SERVICE CARD



Left: Bearing lubricated with competitive oil. *Right:* Bearing lubricated with Shell Vexilla D is still bright after 5000 hrs.

Left: Bolster using competitive oil is sludged and corroded. *Right:* Bolster using Vexilla D is virtually spotless after 5000 hrs.

BULLETIN:

Shell reveals how new sludge-fighting Vexilla Oil D reduces spindle wobble, saves yarn that once would have been lost.

A leading textile mill compared Shell's new Vexilla® Oil D with a good, competitive spindle oil. They ran both oils for 5,000 hours at 9,000 rpm on identical frames.

Vexilla D whipped competition cleanly: No deposits or corrosion to cause wobbly spindles or excessive ends down.

And Shell's new oil did not spoil an inch of yarn. It is made to scour out of all fibers—synthetics included. Read how this new Shell oil may save money on your frames.

NEW SHELL Vexilla D was developed to solve two major spinning problems:

1. To keep contaminants from adhering to spindle blades or settling in bolster cases—a common cause of wobbly spindles.

2. To cut down yarn losses due to oil misting. *Vexilla D readily washes out of yarn.*

Here is how new Vexilla Oil D functions:

New Shell Vexilla D is a *dispersant* oil. This simply means that Vexilla D keeps little bits of sludge (oxidized oil) and lacquer from "growing." And it prevents them from depositing on sensitive spindle parts.

See the difference

In six months or less you start seeing the results of Vexilla D's dispersancy. Spindle blades are bright and clean. No sludge deposits or lacquer in bolsters. No corrosion. No costly spindle wobble.

With no sludge deposits and corrosion there is less spindle drag. Fewer ends down. Less maintenance.

Resists foaming

Vexilla D is specially formulated by Shell to resist foaming. Powerful additives prevent foaming and misting—even at maximum speeds. Oil stays in the bolster where it belongs.

But Shell didn't stop there. A special cleansing agent was also added to Vexilla D.

No longer need good yarn be ruined by oil thrown up by spindles or by accidental spillage. Vexilla D does not stick to yarn. It washes out, as mill experience shows.

Check your Shell Industrial Products representative for complete facts on new Vexilla Oil D. Or write: Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

SHELL

A BULLETIN FROM SHELL
—where 1,997 scientists are working to provide better products for industry.

CIRCLE 157 ON READER SERVICE CARD

TENNANT

The Textile Industry's Most Widely Used

Floor Maintenance System

More than 1000 of America's largest textile mills now save money by using the **complete** TENNANT SYSTEM of floor care . . . consisting of TENNANT Methods, Materials, and Machines.

FOR HEAVY DUTY DRY CLEANING—TENNANT Heavy Duty Model E Floor Machine weighs only 95 lbs., yet cleans a 21" path. Vacuum picks up dust and light soilage. Ideal for both wood and other textile mill floors. 1 hp electric motor. Larger machines also available.

Self-propelled Tennant Model E Floor Machine

Walk-behind Tennant Model 40-E Electric Sweeper

NO FUMES . . . NO NOISE . . . because the compact new Model 40-E Sweeper is also battery-powered. Cleans 34" path, turns in its own tracks. *Sweeps 2 to 5 times faster than a man with a broom, yet does a far cleaner job.* Very powerful brush-and-vacuum system sucks fine dust into 2200 sq. in. filter. Outperforms any other sweeper its size for clean, dust-free work. Low priced. TENNANT Sweepers are also available in gasoline and LP-gas models. Larger rider-type models sweep paths up to 88" wide.

OTHER FLOOR MAINTENANCE AIDS. TENNANT *heavy-duty* **Floor Seals** are easy-to-apply, attractive, long-lasting, non-darkening, take punishing traffic. **Cleaning Cylinders** (many types) on Floor Machine erase dirt, stains, scuff marks, and restore gleaming finish. TENNANT **V-Mop** has exclusive scissors action which allows it to spread to exact width desired . . . from 6" to 57". V-design triples load capacity without spilling. Available in 37" and 57" widths, expanded. **Channel Mop** has 3 removable 10" sections; sweeps 30" path. Weighs only 6 lbs.

V-Mop, Cleaning Rolls, and a typical Tennant Floor Seal used in the Tennant System

PERSONAL CONSULTATION. Your TENNANT Man is a qualified floor expert, ready to analyze your problem and give free estimate of savings possible in *your* mill.

WRITE TODAY *for illustrated bulletins and performance data. Or ask for survey of your floor.* G. H. Tennant Company, 737D N. Lilac Drive, Minneapolis 22, Minnesota.

FLOOR MAINTENANCE SYSTEMS

Equipment & Supply News

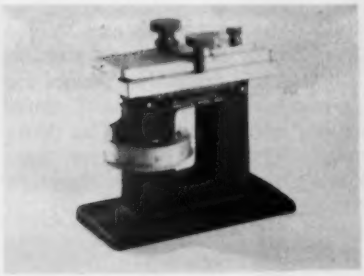
. . . *Begins on page* 143

E-27—Office chair comes in four types: swivel armchair, guest armchair, side chair, and stenographer's swivel chair. All models have contoured backs and foam-cushioned seats that extend beyond the edge of the frame for complete leg ease. Upholstery is elastic, resin-coated, vinyl in Tinta-Gray with black plastic welting. Metal parts are finished in gray baked-on enamel. Lyon Metal Products, Inc.

E-28—Pushbutton switch features corrosion-proof, all-rubber, weather-sealed construction. It can be used for any two-station pushbutton application. The unit uses micro-type, one- or two-pole switches. These switches fit all FS and FD boxes. Joy Mfg. Co.

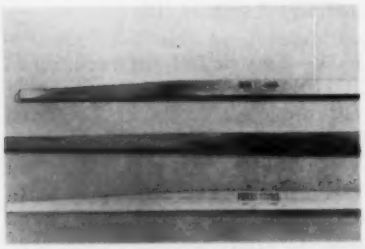
E-29—Ball valve has built-in union ends for easy installation, operation, and maintenance. The union ends can either be screwed or welded to the pipe ends. Then the one piece valve body is assembled to the union nut. This valve also features an O-ring seal design. In addition, the stem seal can be replaced without removing the valve from the line. Teflon seats are rated for 600 psi. on 1- to 2-in. valves and 1000 psi. on ¼- to ¾-in. valves. Units are available in stainless steel, carbon steel, or brass. Clayton Mark & Co.

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



E-30—Fiber microtome meets the requirements for testing of wool and mohair under the ASTM tests No. D 472-56 and No. D 1381-57T. The microtome aperture is 0.125 x 0.312 inches, which is large enough to take a wool sliver. The top cutting plate is 0.250 inch thick and is constructed of chromium-plated steel. Measurements of the wool or mohair fibers are done at 500X magnification. Mico Instrument Co.

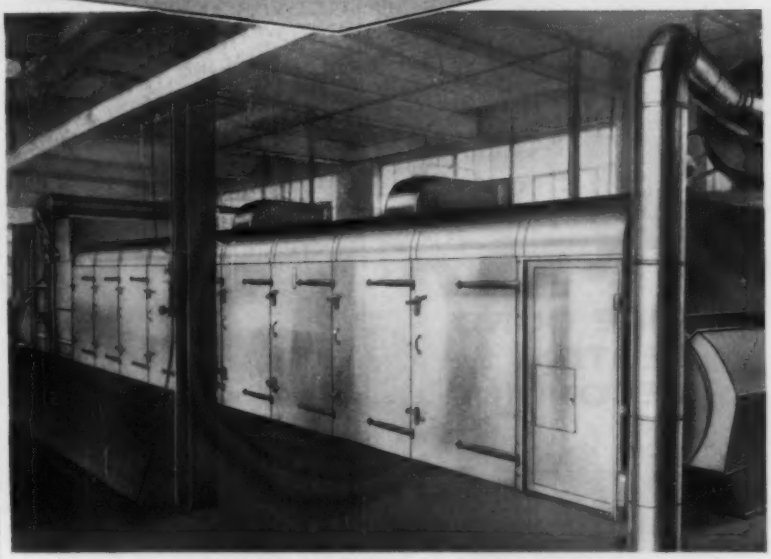
E-31—Strapping tools for Avistrap include a pneumatic tensioner. Model AVN-1 is a pusher type and Model AVN-2 is used for pallets and general use. This tensioner weighs four pounds. All widths of strap, ¼ to ¾ inch, can be handled. American Viscose Corp.



E-32—Pickerstick comes in two styles. One is a compressed-hickory stick, called Bett-A-Stix. The other one is made of laminated wood, impregnated with compressed phenolic resin. This laminated stick, called Tuff-Top Stick, has a specific gravity of 1.30 at the top and 0.90 at the bottom. The compressed stick retain the toughness and flexibility of natural hickory. Louis P. Batson Co.

. . . *Turn the page*

How to Cut Costs in Fibre Processing



The SARGENT System...

Fully Automatic Handling of Natural and Synthetic Staple from Dye Kettle or Washer to Card.

Delivers uniformly dried, lofty stock at high volume rate. Releases manpower for other work. Better than 1,000 lbs. per hour produced continuously, day in, day out. Installations have cut processing costs better than one-third.
This highly efficient, economical Sargent-designed system has only five units:

1. Rotary type Wet Feeder takes air-blown wet fibres from the dyehouse, feeds them to squeeze roll machine. Has ball-bearing main cylinder with stainless steel teeth, a rotary comb, two heavy rubber aprons — one to feed fibre to main cylinder, the other to deliver fibres to nip of squeeze rolls.
2. Extractor has sectional rubber ring roll, hammered steel bottom roll with fine knurl. Pneumatic loading, two air cylinders, control panel and indicating dial. Working at 80 lbs. pressure estimated air consumption is 4 cfm.
3. Stock Fan and Cyclone Condensor. Stock fan takes fibres from extractor, delivers them to cyclone condensor mounted above hopper of dryer feed, opening fibres and conditioning them for even, smooth delivery to dryer.
4. Rotary Feeder delivers even layer of fluffed fibres to dryer conveyor. Designed to effect a semi-combing action, eliminating matted bunches for more uniform drying, fewer neps at card.
5. Dryer with Blow-Up Section. Air-flow is down through traveling stock, with up-draft at blow-up section, midway of dryer. A highly efficient way to redistribute fibres evenly over stainless steel perforated flight conveyor and to even out moisture content of all fibres. Equipped with air-operated recording type temperature controls complete with steam control valves and air filter. These dryers are designed for easiest cleanout, fastest installation and highest operating economy of any dryer on the market.

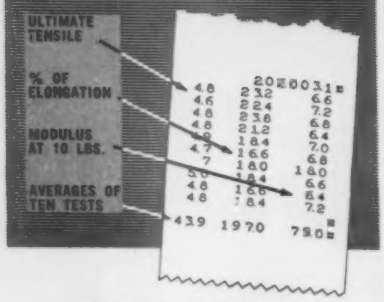
Every machine in the system boasts Sargent's rugged construction; with simplicity of design, minimum maintenance, dependable, steady performance. Here is a system to save you money, man-power, time. Let us give you complete details.

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • ATLANTA • CHARLOTTE • HOUSTON • CHICAGO • DETROIT • TORONTO

COMPLETE!
INSTANT!
AUTOMATIC!



TIRE CORD TESTING *and* RECORDING

with the Scott Model IP-4,
"SCOTAMATIC" *Inclined Plane Tester*

Here's *fully automated* textile testing and recording that can cut a big slice out of your quality control costs. Combining highly accurate digital computing devices with the Model IP-4 the "Scotamatic" Tester provides *unattended* testing of up to 200 tests per hour . . . with each test recorded instantly and permanently on tape.

"Scotamatic" operation removes human error from testing . . . permits a single operator to supervise several testers, or perform other duties. Once control settings are adjusted, the testing proceeds continuously and automatically, with tension and rate of stress precisely uniform. When samples break, stress-strain data is tape recorded, and each group of 10 tests is subtotaled for quick computation of sample averages.

Put comprehensive and economical yarn testing to work in *your* mill or lab. Write or call today for complete facts about the "Scotamatic" and other world-standard Scott Testers designed for the textile industry. Scott Testers, Inc., 95 Blackstone St., Providence, Rhode Island. Tel. DExter 1-5650 (Area Code 401).

SCOTT TESTERS

THE SURE TEST... SCOTT!

Equipment & Supply News

. . . *Begins on page* 143

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-33—Emergency lighting gives protection against hazard of power failure. Unit is fully automatic. Silver contact points connect the lamp to the battery when 115-v., a.c.-power fails. It automatically disconnects when power is restored. The unit is powered by a 9-v. dry-cell battery. Fresh batteries can be installed in a few minutes. This emergency light uses a 25-v., sealed-beam lamp. Light operates for 3¼ hours per battery. Unit measures 9⅛x7⅞x15½ inches. Exide Industrial Marketing Div.

E-34—Fork lift truck uses a three-stage mast to increase the range of elevation. On a 2,000-lb. reach truck the collapsed height is 83 inches and it lifts to 180 inches. These three-stage masts are available on straddle or reach types. Raymond Corp.

E-35—Pushbutton switch, smaller than a 1-in. cube, is miniaturized and lighted. It is designed for control equipment where visual control indication is required. The miniature lamps can be replaced in seconds. This switch is fitted with spring clips for easy insertion and removal from mounting holes. It operates on 7 amps. at 24-v. d.c. and 115- to 230-v. a.c. Minneapolis-Honeywell

E-36—Storage cabinet uses welded door frames to assure accurate fit and fast field assembly. Shelves are 18-gage steel with vertical shelf-support strips built in. The doors have theft-proof hinges of five-knuckle construction. Standard Pressed Steel Co.

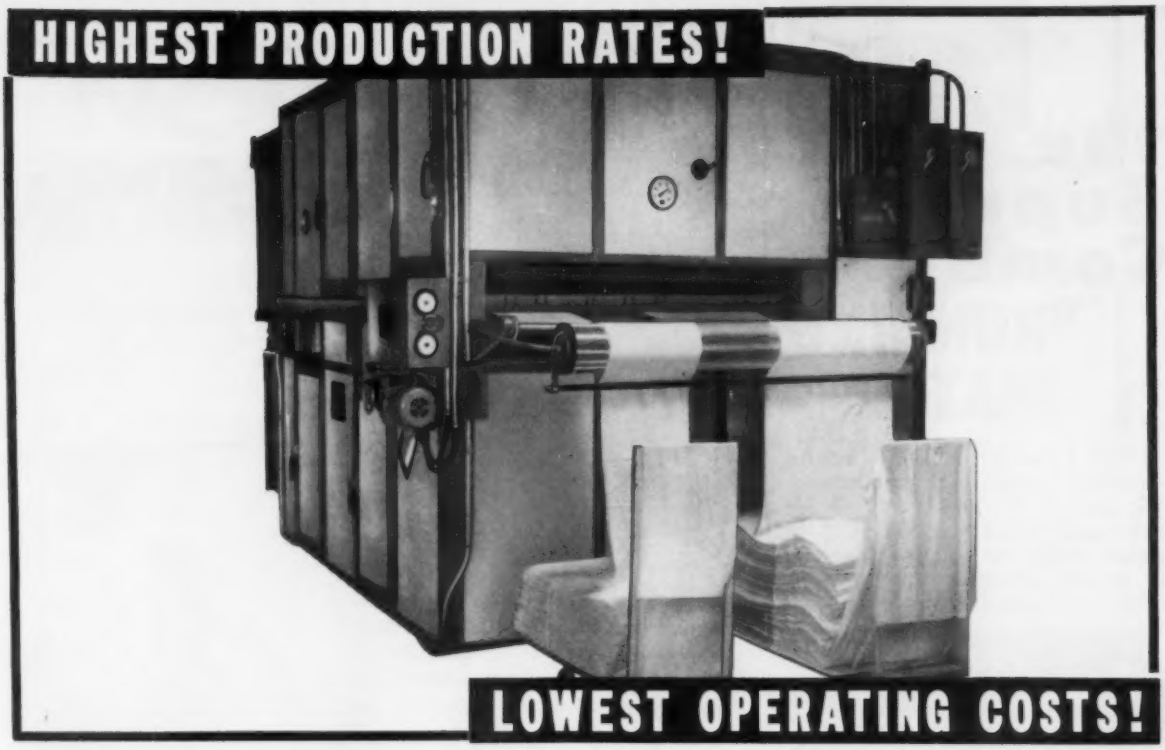
E-37—Floorsweepers feature floating floor seal for effective control of dust. The unit cleans corners as easily as open spaces. Units picks up dirt, dust, and heavy debris. All dust goes to a vacuum bag while heavier debris is swept into a steel hamper. Lambert, Inc.

E-38—Electric fork-lift truck, Series JC, comes in stand-up type. Three sizes are available: 2,000, 2,500 and 3,000 pounds at 24-in. load center. This truck features standard or full free-lift mast, two braking systems, and controlled-castor wide tread steering axle. A single cover plate exposes all operating drives and pumps for quick inspection and servicing. Mercury Mfg. Co.

E-39—Sealant locks cap and shoulder screws, holding them secure against all shock and vibration. This sealant, called Loctite, is put on the screw threads. It works on all size screws or bolts. Ordinary tools will remove the parts. American Sealant Co.

. . . *Turn to page* 162

HIGHEST PRODUCTION RATES!



LOWEST OPERATING COSTS!

Completely relaxed drying for knitted goods

with the Saco-Lowell/Fleissner Dryer

The Saco-Lowell/Fleissner System, manufactured in our Sanford-Jonesboro, N.C. Plants, is adaptable to all types of fabrics not requiring tentering. It is especially suitable for the *processing of knitted goods* and has revolutionized this type of drying. Shrinkage is approximately the same as obtained with tumbler type dryers.

The Saco-Lowell/Fleissner Suction Drum Dryer evaporates three times the quantity of water per square foot of drying surface compared to any other drying system and has adjustable overfeed up to 25%.

THESE MAJOR ADVANTAGES CUT COSTS, INCREASE PROFIT:

1. **Gas or steam operated**
2. **Extremely low steam consumption**
3. **Cleaning periods virtually eliminated**
4. **Most uniform final moisture content**
5. **Shortest drying time — no discoloration**
6. **Entirely tensionless drying**

Visit us at booth 78, Knitting Arts Exhibition, Atlantic City, April 24-28

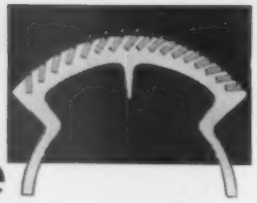
THE STANDARD OF QUALITY AND PERFORMANCE Since 1813

SACO-LOWELL SHOPS

Textile Machinery Division

Executive and Sales Offices: GREENVILLE, SOUTH CAROLINA

Branch Sales Offices: ATLANTA, GA., CHARLOTTE & GREENSBORO, N. C., GREENVILLE, S. C., SACO, ME.



the Super J Comber's "RUNNING MATES!"

The Even-Draft High Speed Drawing Frame plays an outstanding part in the Whitin system for the unsurpassed processing of either carded or combed sliver. It is equally effective for the pre-combing or post-combing operation.

The Whitin Even-Draft operates at speeds up to 600 ft. per minute on carded stock (or 450 ft. on combed), producing sliver characterized by its evenness and uniformity.

The Whitin Super Lap machine offers a completely new concept in the preparation of Comber laps, effectively superseding all earlier lap forming techniques.

This most unusual new machine processes laps of superior quality from either 48 or 60 ends of drawn sliver, with weights of up to 1200 grs./yd.

Its production capacity is approximately 500 lbs. per hour, turning out laps weighing 35 lbs.

WHITIN

Equipment & Supply News

. . . *Begins on page* 143

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-40—Starter, class 10, works on fractional and 1-hp., single-phase motors. Single- and two-pole units include a built-in, trip-free thermal relay. The two-pole starter is required to break both lines for d.c. motors. Unit has a stainless-steel toggle. Its snap action minimizes arcing for maximum life. The melting alloy relay cannot be closed until the overload is eliminated. Furnas Electric Co.

E-41—Hand truck uses a roller conveyor action on the fork. This makes it easy to load and unload. Closer stacking is possible without shoving after unloading. The truck is built of electrically welded steel tubing. It rolls on ball-bearing rubber tires. Southeastern Mfg. Inc.

E-42—Leak detector works on pressurized air and gas lines. The liquid, called Snoop, is applied from an 8-oz. squeeze bottle through a 12-in. long, ⅛-in.-dia. tube. This leak detector works on all pipe connections, even the underside of a joint. Nuclear Products Co.

E-43—Switchgear, load-interrupter type, protects 2400- to 13,800-v. distribution circuits. Built around a drawout design, the switch-and-fuse element is withdrawn from the enclosure for inspection or fuse replacement. Unit can be furnished for indoor and outdoor service either as single-circuit units or multicircuit switching centers. Two voltage classes are available (5 and 15 kv.) and two switch ratings (600 and 1200 amps. continuous). Unit comes with BA boric acid fuses or BAL limiting fuses. Westinghouse Electric Corp.

E-44—Metering pump, Series 100, handles 0.95 gallons per hour at 1200 psi. or 50 gallons per hour at 100 psi. The unit comes in one- or two-outlet ports. With two-outlet ports, the capacity is doubled or the pump can be used for proportional blending. All parts of the pump touched by the fluid are corrosion-resistant. The overall size of the pump is less than two square feet. Wallace & Tiernan, Inc.

. . . . *Turn to page* 164

NOW!

get up to 20% more production

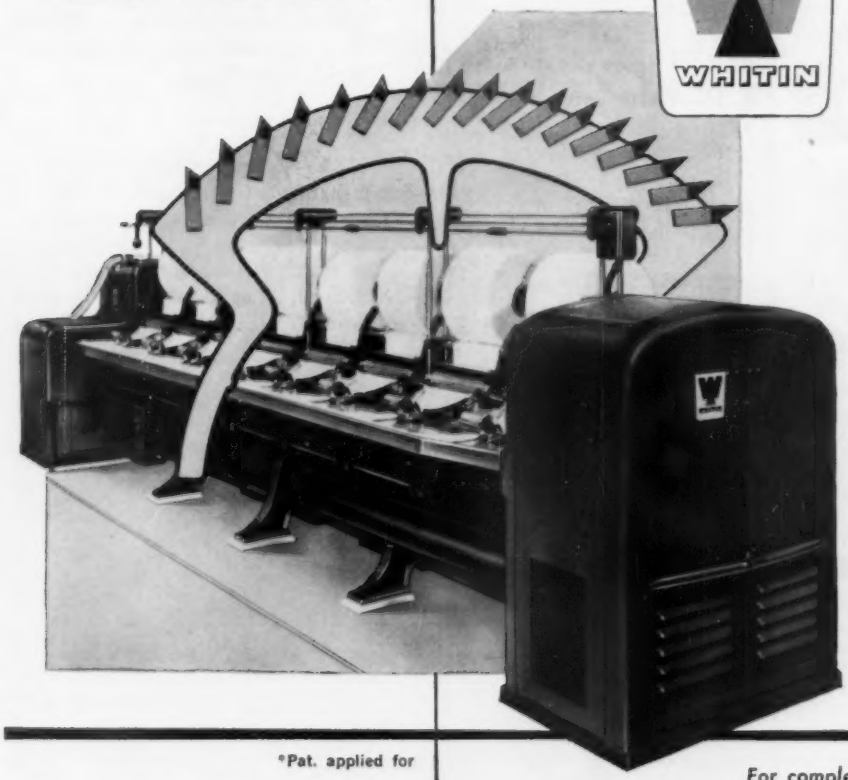
with the WHITIN Super J Comber

and the brand new "GOLDEN CIRCLE"* HALF LAPS

Get full-needle lap penetration and excellent quality combing using 1200 grain laps.

The Whitin Super "J" Comber has already earned an international reputation for its high production and trouble-free performance — but now, with the brand new Golden Circle Half Lap, its production potential is greater than ever.

The Golden Circle Half Lap is the patented product of Whitin research — an extensive research effort "zeroed in" on one objective only, to design and produce a half lap to excel all others in the "quality" combing of heavy grain laps. On Model J5 and J6 Combers, the Golden Circle Half Lap offers you:



SPECIAL FEATURES . . .

- Full-needle lap penetration.
- Lap processing up to 1200 grains.
- Anodized aluminum construction — lighter and stronger.
- Needle strips bonded in slots for greater rigidity.
- Progressive row needle spacing reduces plucking.
- Runs cleaner — stays cleaner.
- Consistent and better nep removal.
- Contoured for better air flow in piecing zone.
- Reduced brush wear.

*Pat. applied for

For complete information ask your Whitin representative or write direct to us.

WHITIN MACHINE WORKS

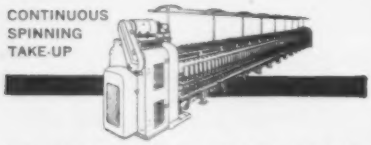
WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

The best way to better yarns

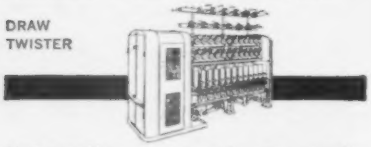
Only the adept hands of Whitin could create such a complete line of complex and precisely-built machines as is exemplified by the High-Production twisters shown below.

CONTINUOUS SPINNING TAKE-UP



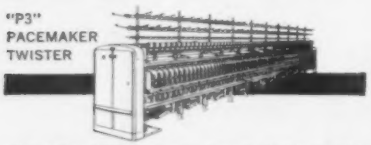
The Continuous Ring Spinning Take-Up machine is especially designed for processing Rayon, Acrilic and various other man-made continuous filament yarns.

DRAW TWISTER



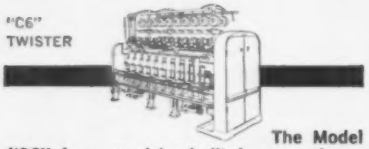
Universally recognized by the world's leading producers of nylon and polyester yarns as the outstanding Draw Twister.

"P3" PACEMAKER TWISTER



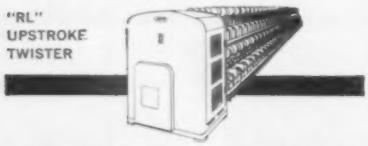
The Model "P3" is our latest development in high speed ring twisting designed especially for processing continuous filament glass, nylon and polyester fibers.

"C6" TWISTER



The Model "C6" is a precision-built large package, high-speed twister for continuous filament fibers. Millions of pounds of acetate yarns are produced yearly on this model.

"RL" UPSTROKE TWISTER



Another Whitin first — is the Model RL, designed for heavy-duty upstroke twisting. Now predominantly used for producing tire cord and carpet yarns. Packages carry from 6 to 10 lbs., depending on type of fiber being processed.

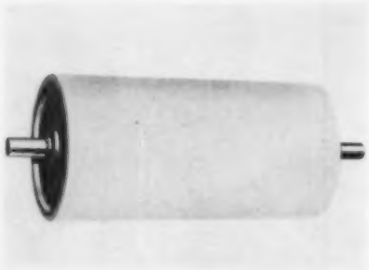
WHITIN

Equipment & Supply News

. . . *Begins on page* 143

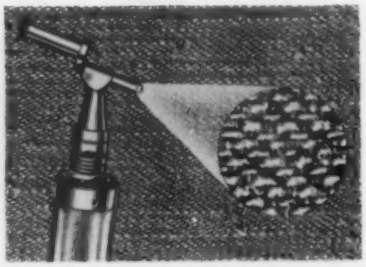
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-45—Caster, called Paydisc, features a removable tire wheel. Wheel diameters range from 3 through 10 inches. Rust-resistant cadmium side disc separate to remove the tire. Units are available with cup, cone, or Hyatt-type roller bearings. Payson-Harris & Reed, Inc.



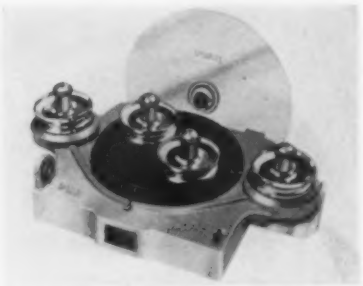
E-46—Plastic-covered roll comes in sizes up to 60-in. diameter by 11 feet long. It is covered with any thickness of a standard NEMA-grade plastic. Roll increases coefficient of frictions and resists chemicals. Unit has through or stub shafts. Barclay Machine, Inc.

E-47—Hydraulic spray nozzle has a clean-out needle that automatically clears the orifice with each on-and-off cycle. This clean-out needle is an extension of the shut-off valve. Therefore, each time the valve closes this needle removes any residue. Spraying Systems Co.

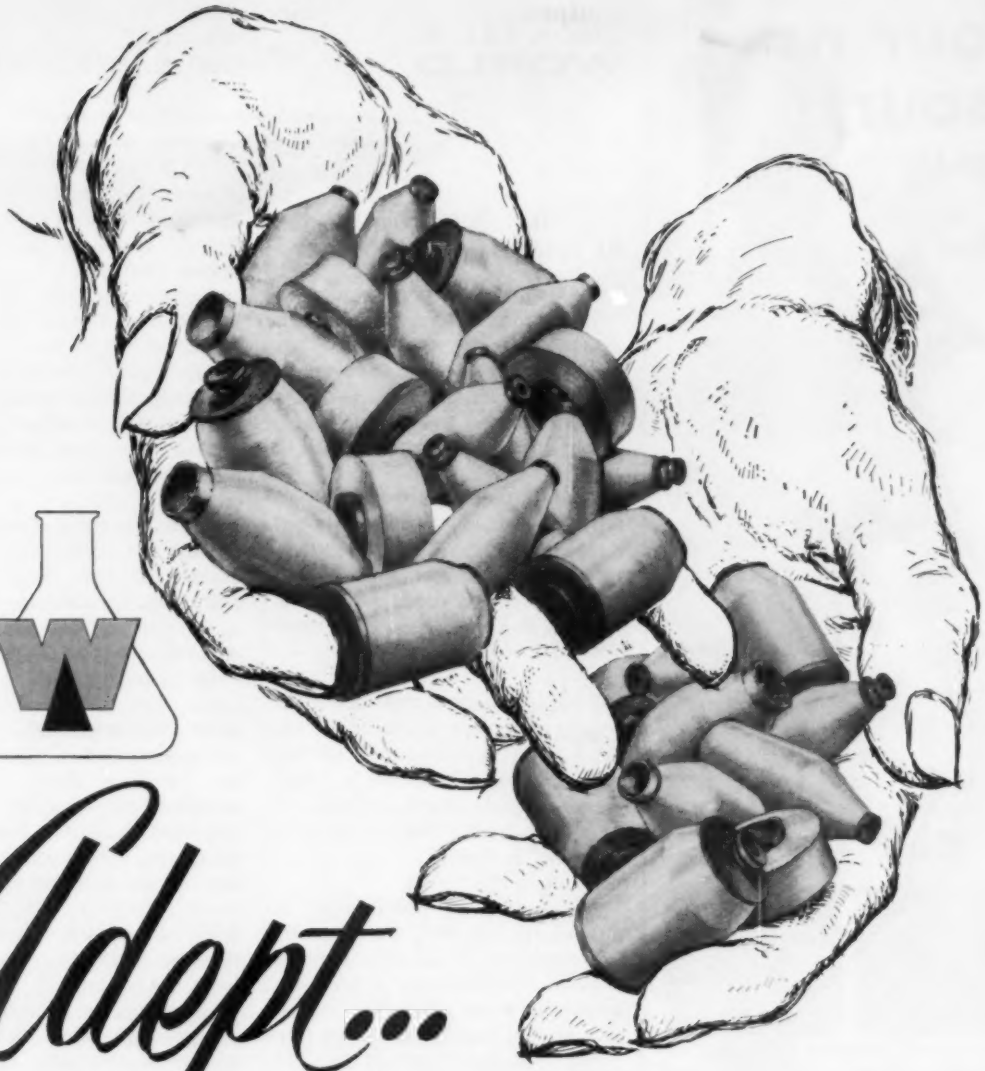


E-48—Inspection light comes with a magnifying lens. The unit has a miniature lamp that is attached by a bayonet joint to the battery handle. Handles come in two sizes to take standard C and D flashlight batteries. The smaller handle is also available with rechargeable nickel-cadmium batteries. Magnification is furnished by a fixed-focus 2X lens or an adjustable focus 4X telescope. Welch Allyn, Inc.

E-49—Steam trap for radiators uses a thermostat to regulate the flow of steam. The bimetallic control element is stainless steel. Construction of the trap is a forged-bronze body with all internal parts made from stainless steel. Farris Engineering Corp.



E-50—Creel tension unit comes in 2-, 3-, or 4-posts. The two center posts are mounted on a turntable that can be adjusted to any of eight postions through a 180-deg. arc. These settings give eight different variations in tension. The turntable is locked in positions. The tension changes are made by a release button. Unit has a transparent balloon shield that permits ease of threading. McBride



Adept...

in the processing of man-made fibers

The world of man-made fibers is a fascinating one — fast-paced, sophisticated — ever-changing!

The successful creation of fibers in the laboratory has been amazing. Equally amazing, too, has been the development of the processing machinery which enables them to achieve their maximum potentials.

Whitin has teamed — for over 30 of its 130 successful years of experience in building textile machinery — with the pioneers and leaders of this industry. With their full confidence, Whitin has applied its immense facilities and very considerable talent to designing this complex machinery — to building it with utmost precision.

Today, the world's leading producers of rayon, acetate, nylon, polyester and polypropylene fibers are processing vast quantities of top quality yarns on various types of Whitin machinery, including Continuous Spinning Take-up equipment, Draw Twisters, Special Purpose Ring Twisters and Upstroke Twisters.

It's as simple as this. The machinery you need now, or to process the *fibers of the future*, should be entrusted to hands that are skilled, to hands that are experienced — the adept hands of Whitin.

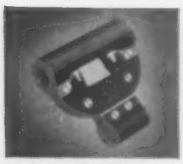
WHITIN
machine works

WHITINSVILLE • MASSACHUSETTS

your no. 1 source

GARLAND

for



LOOM PICKERS . . . RAWHIDE and PLASTIC

BUNTERS

LEATHERS

ROD LUBE

Send for complete information on ALL Garland textile products. Ask for special data on new Garland plastic loom pickers.

Garland MANUFACTURING CO.

Also manufacturers of Nylon and Rawhide Hammers and Mallets.

50 WATER STREET • SACO, MAINE

TEXTILE WORLD . . . New Literature

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

L-1—Centrifugal pumps are the subject of this 4-p., 2-color brochure. General specifications, dimensions, construction, and special applications are discussed. A cross section view and performance graphs included. Fostoria Corp.

L-2—Adjustable-speed drives are fully analyzed in this 6-p. fold-out. Labeled sectional views of four types of drives are included with data on ratings, speed ranges, associated controls, and special modifications. Louis Allis Co.

L-3—Card feeders and their component parts are discussed in this 4-p. report. Operation of two specific types of feeders is briefly discussed with photos included for clearer understanding. George S. Harwood & Son, Inc.

L-4—Casters that fulfill most industrial requirements are illustrated and described in this 16-p. compact manual. Information is presented in tabular form. Covers wheel diameter and face, wheel type, and capacity. Rapids-Standard Co., Inc.

L-5—Flange motors are depicted in Bulletin 1430. Includes photos of models and labeled line drawings. A valuable chart is included giving dimensions, tolerances, weight, width, and depth of specific types. Century Electric Co.

L-6—Centrifugal pumps are graphically discussed in Bulletin 1052-1. Both external view and cross section of pump are included. General specifications, design features, and construction are fully explained. Fostoria Corp.

CHEMICALS & SUPPLIES

L-7—Antistatic compounds are related in Data Sheet No. 6. Individual compounds, their uses, effectiveness, and costs are listed. Also includes independent scientific papers available to the public. Merlix Chemical Co.

L-8—Latex, its properties and uses, is the subject of this 4-p. bulletin. Tables include formulas and compounding information. A list of raw-material suppliers is also included. Goodyear Tire & Rubber Co., Chemical Div.

L-9—Exhaustion dyeing is explained in Circular No. 1425. The folder contains illustrations and rate-of-dyeing curves. It also describes the application of dyes. Invaluable fastness tables are featured. Sandoz, Inc.

L-10—Silicones are comprehensively discussed in this 16-p. booklet. Photos, charts, and graphs complete the text, which explains silicones, their uses, and ways in which they can be adapted. Silicones Div., Union Carbide Corp.

L-11—Chemistry of Lactonitrile is the title of this 16-p. technical bulletin. Applications, reactions and properties of the bifunctional chemical are described. A comprehensive, invaluable aid. American Cyanamid Co., Petrochemicals Dept.

MATERIAL HANDLING

L-12—Dust-collection and recovery systems are depicted in a 4-p., 2-color folder. An extensively labeled cutaway view, line drawings, and sectional photos are included. Covers many areas of application. Buell Engineering Co., Inc.

L-13—Case-sealing machine is introduced in Data Sheet No. 808. Specific applications are cited. Photo helps to explain the complete operation of the machine. Clearly and graphically discussed. General Corrugated Machinery Co., Inc.

L-14—Fork lift truck is described in this 6-p. foldout, Circular 32B. Includes photos of component parts,

numbered photo explaining full operation, line drawings, and specification charts. Lewis-Shephard Products, Inc.

ENGINEERING

L-15—Sealed hydraulic system, used in place of the conventional stuffing box to prevent leakage or contamination, is described in 4-p. brochure. Graph and cross-section photos included. Lapp Insulator Co., Inc., Products Equipment Div.

L-16—Drainlines are comprehensively discussed in this 16-p. catalog. Illustrated with photos, line drawings, and graphs, this booklet contains data on corrosion-resistant system for disposal of chemical wastes. Corning Glass Works

L-17—Automatic lubrication systems are catalogued in this 24-p. manual. Labeled photos, line drawings, and cutaway views of component parts are included. Contains description of operation. Stewart-Warner Corp., Alemite Div.

L-18—Ductile iron regulators are featured in a 4-p. folder, which also contains a condensed catalog of products. Describes in detail composition, properties, specifications and test results. Jordan Corp., Division of OPW Corp.

L-19—Woven pile weatherstripping is introduced in this 4-p. brochure with photos and drawings. Composition and performance are discussed. Available parts and shapes are pictured. Sample of material attached. Schlegel Mfg. Co.

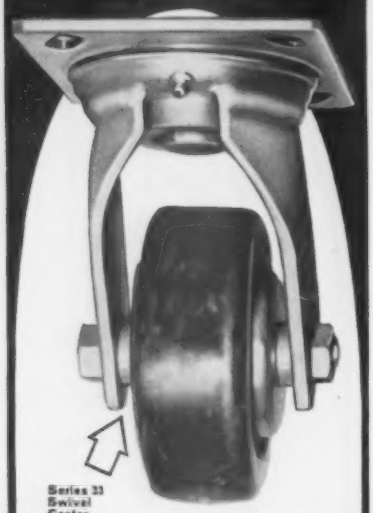
L-20—Multi-speed motors are discussed in this 4-p. bulletin. Photos and graphs help to complete a comprehensive description of specific models and their operation. Specifications listed in detail. Century Electric Co.

L-21—Air filters are depicted in this 8-p., colorful directory. Complete specification charts, photos of component parts, and flow diagrams are included. Air regulators and air accessories are also included. Wilkerson Corp.

L-22—Water columns for boilers are featured in data sheet with sec-

WORSTED
YARNS
PACKAGE
-DYED
BY GLOBE
. . . faithfully capture the most subtle of color conceptions created by leading fabric and garment stylists. A new dimension in color beauty and elegance is assured your creations when you specify worsted yarns packaged-dyed by Globe.
Globe does package dyeing on tubes, skein and warp dyeing, warp bleaching and sizing.
Yarns processed include cotton, worsted, linen, blend and novelty yarns, and all synthetics—including Arnel®, Creslan®, Orlon®, and Zefran®.
Visit Us At K.A.E.
—Booth #806—
Globe Dye Works Co
4500 Worth Street
Philadelphia 24, Pa.
1865

THREAD GUARD
Casters
for the
TEXTILE INDUSTRY

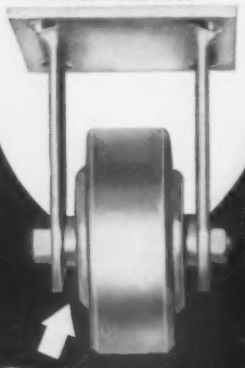


Series 33 Swivel Caster with floor protective Texite Wheel. Note extra clearance for easier cleaning.

Designed especially for maintenance-free Textile mill application, the economical new Albion Series 33 casters offer a smooth, wide-spaced fork with close-fitting pressed steel thread guards around the wheel hub. Spacer tubes fitted between the fork legs and thread guards provide ample clearance for easy cleaning without dismantling. The new Series 33 is stocked in 4", 5" or 6" swivel and rigid models with choice of semi-steel or Texite wheels. Special sizes and/or features also available.

Call today—for full information, specifications and surprisingly low prices on the new Series 33.

Series 33 Rigid Caster with Semi-Steel Wheel



ai ALBION INDUSTRIES, INC.
Albion, Michigan

NEW LITERATURE

. . . *Begins on page* 166

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

tional views and labeled drawings. Extensive description of principle of operation. Chart lists specifications. Accessories indicated. Jerguson Gage & Valve Co.

INSTRUMENTS & TESTERS

L-23—Control switch for tufting machinery is described in this data sheet with labeled drawings and diagrams. Characteristics, electrical ratings, and money-saving features listed. Minneapolis-Honeywell Regulator Co.

L-24—Electronic controllers are discussed in Catalog C-15-2a. Extensively illustrated, this directory features detailed close-ups, performance charts, and specifications for numerous models. Minneapolis-Honeywell Regulator Co.

L-25—Flow test kits, each containing meters of various sizes, are introduced in this 4-p. bulletin. Contains photos of models, capacity charts, temperature-rating graphs, and materials of construction. Fischer & Porter Co.

L-26—Computer technology is discussed in this 20-p. illustrated brochure featuring the latest advances in the field. Interestingly written, this report discusses several computer models and their operations. Computer Systems, Inc.

L-27—New switches are introduced in this 8-p. publication aimed at the design engineer and other users of precision switches. Features photos and descriptions of helpful applications. Minneapolis-Honeywell Regulator Co.

GENERAL

L-28—Filter cartridges are introduced in this 8-p. brochure with flow-rate conversion charts. A helpful viscosity table is also included with a description of the construction of a cartridge. Filter Products Div., American Felt Co.

WRINKLE-FREE
CONTINUOUS-ROLL OPERATION

KAY ANTI-WRINKLE SLAT EXPANDER

By guarding your processing line against wrinkling, the Kay Slat Expander:

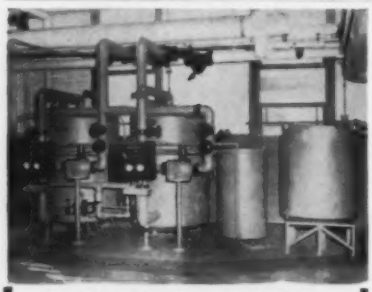
1. Allows faster, more efficient machine operation
2. Reduces losses through rejection
3. Assures tighter, neater rolls
4. Assures higher-quality printing and closer register

Supplied with wooden slats for use at room temp. and aluminum for use in ovens, to 550°.

Write for a data sheet

K KAY MACHINE COMPANY INC.
Expanders and Rollers

130 Paterson Ave., E. Rutherford, N. J., WEbster 3-4641
EXPORT OFFICE: 401 Broadway, New York 13, N. Y.
MIDWEST REPRESENTATIVE: C. J. Beringer Co.
5667 Milwaukee Avenue, Chicago, Ill., SPring 5-3333
CIRCLE 253 ON READER SERVICE CARD



INVERSAND WATER SOFTENER PLANT
producing
CLEAR IRON-FREE 100% SOFT WATER
Often For As Little As 1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
Clayton 9 New Jersey
CIRCLE 254 ON READER SERVICE CARD

TEXTILE WORLD . . .

Calendar

April

Alabama Textile Manufacturers Association, 60th-Anniversary Convention, Buena Vista Hotel, Biloxi, Miss., April 12 to 14

Narrow Fabrics Institute, Inc., spring meeting, The Tides Inn, Irvington, Va., April 16 to 18

Institute of Textile Technology, Technical Advisory Committee and Board of Trustees, spring meeting, Charlottesville, Va., April 18 & 19

Georgia Textile Operating Executives, spring meeting, Hightower Building, Georgia Institute of Technology, Atlanta, Ga., April 22

National Association of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlanta City, N. J., April 24 & 25

Underwear Institute, annual meeting, Hotel Dennis, Atlantic City, N. J., April 24 & 25

45th Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., April 24 to 28

Georgia Textile Manufacturers Associations, Inc., annual meeting, Hollywood Beach Hotel, Hollywood, Fla., April 26 to 29

Alabama Textile Operating Executives, spring meeting, Thach Auditorium, Auburn, Ala., April 29

May

AATT, monthly meeting, Della Robbia Room, Hotel Manger-Vanderbilt, New York, N. Y., May 3

American Institute of Electrical Engineers, textile committee, annual conference, Heart of Atlanta Motel, Atlanta, Ga., May 4 & 5

AATCC, New England Sections, joint meeting, Jug End Barn, Egremont, Mass., May 5 & 6

Phi Psi, annual meeting, Shoreham Hotel, Washington, D. C., May 5 & 6

Material Handling Institute, Eastern States Show, Philadelphia Trade & Convention Center, Philadelphia, Pa., May 9 to 11

Cotton Marketing Conference and Cotton Research Clinic, sponsored by the National Cotton Council, Peabody Hotel, Memphis, Tenn., May 16 & 17

Tufted Manufacturers Association, annual convention, Hotel Deauville, Miami Beach, Fla., May 24 to 27

STORAGE COSTS CUT SHARPLY

with famous

STURDI-BILT

Adjustable Storage Racks

What you see here is the *modern* way to store and handle loom yarn beams. And the "heart" of this system is STURDI-BILT adjustable storage racks. Engineered for strength, safety and savings, STURDI-BILT Racks are now in use by more and more leading textile mills. Learn how you, too, can save with STURDI-BILT. Send for free STORAGE PLANNING GUIDE, along with case history photos of textile installations.

NEW: Ask about our unique "pay-as-you-save" TIME PAYMENT PLAN.

For FREE details write:
STURDI-BILT
Material Handling Division, Dept. TW-41
Union Asbestos and Rubber Company
332 South Michigan Avenue
Chicago 4, Illinois

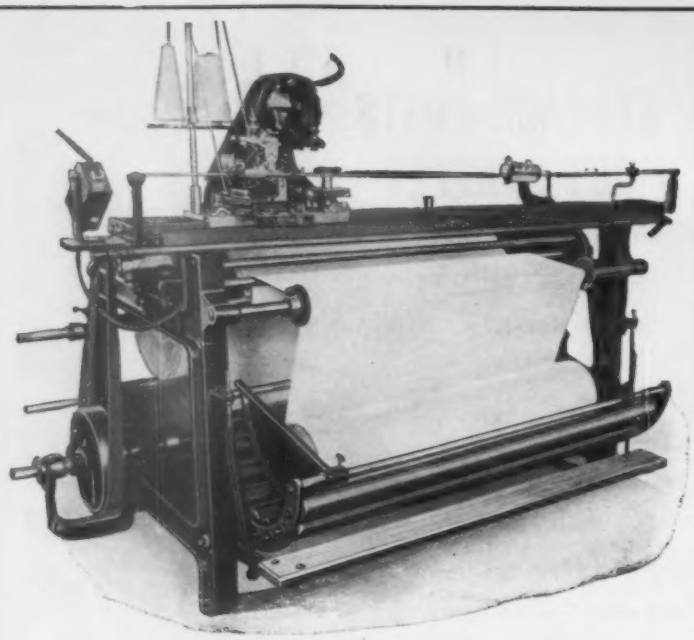
Let this symbol be your guide

STURDI BILT
Racks the goods of the world

CIRCLE 255 ON READER SERVICE CARD

TOMPKINS
SPRING NEEDLE **D-1**
CIRCULAR KNITTING
CARPET MACHINE

Now you can produce 12 or 15-ft. wide carpet and carpet backing — including paper scrim — *faster, at lower cost* with a 54" or 70" TOMPKINS D-1. Both models use standard Tompkins parts *plus* the big quality and economy bonus of the time-proven Tompkins knitting principle. *Write for full details . . .*
TOMPKINS BROS. CO. • 623 Oneida St. • Syracuse 4, N.Y.
Circular Spring & Latch Needle Knitting Machines Since 1846



NO. 4 OPENING AND WINDING MACHINE

Unwinds, sews, measures and rewinds the cloth in rolls in one operation. Keeps cloth clean and free from wrinkles, making a hard straight roll. Can be motor driven and fitted with Dinsmore, Singer, or Merrow Butted Sewing Head as desired.

DINSMORE MANUFACTURING COMPANY
BOX 267 SALEM, MASSACHUSETTS

CIRCLE 256 ON READER SERVICE CARD

"WORLD'S FAIR OF THE KNITTING INDUSTRY"

GO to Your GREATEST Show!

Join thousands of knitters from all U. S., Canada and many foreign countries coming

to find WHAT'S NEW at the Fabulous 45th

KNITTING ARTS EXHIBITION

filling five profit-packed days at

ATLANTIC CITY CONVENTION HALL Monday through Friday

APRIL 24, 25, 26, 27, 28, 1961

Sponsored by

NATIONAL ASSOCIATION OF HOSIERY MANUFACTURERS
UNDERWEAR INSTITUTE NATIONAL KNITTED OUTERWEAR ASSOCIATION

TOPS for . . . Greatest-ever area of floor space used
☐ . . . Increased displays of latest equipment
☐ . . . Number of first-time exhibitors greater
☐ . . . More exhibitors occupying larger space
☐ . . . Larger variety in exhibits than previously
☐ . . . Biggest anticipated attendance in history
☐ . . . Never-before-equalled foreign participation

Get details from ROBERT T. KENWORTHY, INC., Exposition Management

KNITTING ARTS EXHIBITION

10 East 40 St., New York 16, N. Y. Telephone MUrray Hill 5-2250

TEXTILE WORLD . . .

Advertisers'

To get items you want offered in the advertisements in this issue, just circle numbers on Reader-Service Card next to the back cover. If all bulletins listed under one number are not required, please write on card the name of bulletin desired.

A350—Belts. Write for new 12-p. bulletin containing comprehensive engineering and application data. Extremultus, Inc.

A351—Factoring. For further information write for "Profit Through Factoring." Walter E. Heller & Co.

A352—Pneumatic roll picker. Descriptive literature on request. M-B Products.

A353—Rotary pressure joints. S-3002 catalog gives complete details. Johnson Corp.

A354—Anti-wrinkle slat expander. Write for data sheet for details. Kay Machine Co., Inc.

A355—Controller. Complete data on versatile 532A/D available. The Bristol Co.

A356—Humiducts. Illustrated Bulletin 4A-Humiducts on request. The Bahnson Co.

A357—Easy-flo filters. Illustrated Bulletin 27A-Easy-Flo Filters. The Bahnson Co.

A358—Textile chemicals. For complete information on line, write for catalog. Jacques Wolf & Co.

A359—Detergent. Write for full details of Zyrol. Procter & Gamble, Textile Finishes Section.

Literature

A360—Scales. Bulletin 2036 gives further details. Toledo Scale Corp. Toledo Scale Div.

A361—Printweigh. For complete printed-weigh records write for Bulletin 2017. Toledo Scale Corp. Toledo Scale Div.

A362—Floor-maintenance system. Illustrated bulletins and performance data on request. G. H. Tennant Co.

A363—Seat ring. Write for illustrated descriptive folder for complete information, details, and specifications. The Fairbanks Co.

A364—Double-Knit machine. Free booklet on this important advance in the interlock field on request. Supreme Knitting Machine Corp. Inc.

A365—Valves. For full information write for Catalog 613. Lunkenheimer Co.

A366—Silent chain-drives. Book 2425 for complete information. Link-Belt Co.

A367—Pneumatic lap-control system. Write for illustrated brochure. Livingston & Haven, Inc.

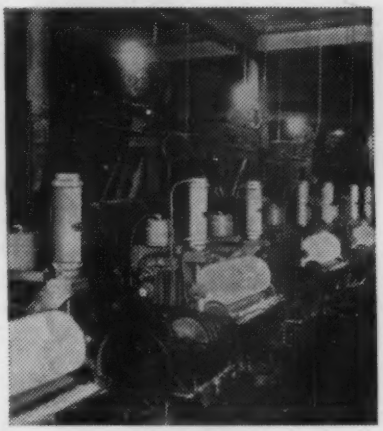
A368—Power transmission. Write for Bulletin 23103. T. B. Wood's Sons Co.

A369—Air filters. For additional information write for Bulletin 150. Air-Maze Div., Rockwell-Standard Corp.

500 INSTALLATIONS GIVE POSITIVE PROOF

MORE PRODUCTION, GREATER PROFITS WITH THE LONG* PNEUMATIC LAP CONTROL SYSTEM

HERE'S HOW: Highest compression ratio on the market; uniform pressure on laps; longer heavier laps . . . up to 92 lbs.; increased production through longer running time between doffs; higher quality laps from cotton and synthetic fibers; installation on any make; maximum safety. Send today for illustrated brochure.



Installation on 1913 model Kitsons

*Patent No. 2,871,519
Other U. S. and Foreign Patents Pending

SEND TODAY FOR ILLUSTRATED BROCHURE

LIVINGSTON & HAVEN, Inc.

P. O. Box 808-T CHARLESTON, S. C.

Representatives in all major textile areas. Address foreign inquiries to Platt Bros. (Sales) LTD., Oldham, England

CIRCLE 257 ON READER SERVICE CARD

Have you stopped learning?

A British statesman, it is said, read Gibbons "Decline and Fall of the Roman Empire" while waiting for his wife to dress for dinner.

Once a man feels the urgency to learn, it's remarkable how he finds the time and place to do it.

If he had to spend countless hours seeking out that which would be most useful in his work, the going might be rough. But, happily, this herculean task has already been accomplished by McGraw-Hill specialized magazines that span almost every field and function.

Your very own publication, for instance, that you are reading right now. Read it inquisitively. Read it imaginatively. Pass it along to your fellows, tell them how much they can get out of it, too . . .

Men who read more...earn more!

Out Goes LINT · FLY TRASH from your SPINNING FRAMES and ROVING FRAMES Quickly • Economically

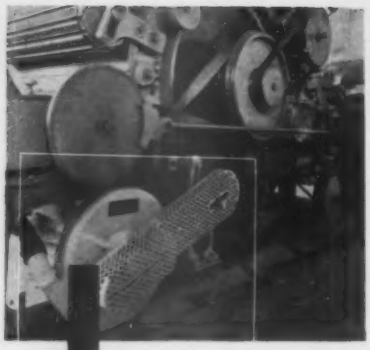
by using M-B AMOSKEAG PNEUMATIC ROLL PICKER

Now, Improved MODEL 59

A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.

Write for Literature

M-B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN



A.C.S. (Automatic Card Stripper)

1. Less Raw cotton needed·····
2. Excellent even sliver obtained·····
3. Operating hours increased···

Multiply your profits---
How ?---
with our **SPINDLE, RING, ROLLER, PNEUMANIEZ, BLO-CLEANER, ACS, SPI-RA-CLEAN**

NIHON RING

Why ?– Because–

–no breaking-in period needed
–super high speed
–less end down
–amazing longevity of traveller

NIHON SPINDLE

MANUFACTURING CO., LTD.
OSAKA, TOKYO, JAPAN

U.S. Representative :
Edward S. Rudnick, Representatives
Olympia Bldg., P. O. Box 244
New Bedford, Mass.
Tel : WYman 6-5528
Cables: RUDNICK NEWBEDFORD

IF YOU CAN FILL THESE SHOES,

you'll find unusual advancement opportunities at

Allied Chemical

Expansion of the fiber and chemical facilities at Allied plants at Chesterfield, just south of Richmond, Virginia and a new fiber plant at Columbia, South Carolina provide outstanding career potentials.

There is room at the top for ambitious men who are interested in faster professional advancement.

If you have an educational background in Chemistry, Chemical, Mechanical, Textile or Electrical Engineering, Physics or Statistics... if you are experienced or seek a future in synthetic yarn manufacturing, chemical processing, polymerization, instrumentation and research & development... NOW IS THE TIME TO GET A HEAD START.

Send your resume in confidence to
Supervisor, Personnel

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL CORP.
P.O. BOX 831TW, HOPEWELL, VIRGINIA

TEXTILE WORLD . . .

News About Suppliers

ALLIED CHEMICAL CORP., New York, N. Y.—Has named J. T. Dunlavy to the Fiber Marketing Dept. He will be in charge of product information and publicity for Caprolan-nylon products. In the Solvay Process Div., Dr. E. F. Booth, Jr., has been named director of research; Dr. E. R. Degginger, research supervisor; and Dr. M. J. Skrypa, associate research supervisor. . . . **ALVEY CONVEYOR MFG. CO.,** St. Louis, Mo.—Has announced expansion plans for its representative's office that services the New England States. . . .**AMERICAN ENKA CORP.,** New York, N. Y.—Has formed a product division-type organization. Dr. Frits Prakke has been named general manager of the nylon division and C. S. Ramsey, Jr., has been named general manager for the rayon division. . . . **AMERICAN VISCOSE CORP.,** Philadelphia, Pa.—Has named Charles Nicholas sales representative in Chicago for its Industrial Packaging Dept. Edward Ruggles has joined the Film Div. as marketing manager. J. E. Crutchfield has been named a salesman in the Charlotte, N. C., district sales office.

CHARLES E. COOPER (left) has joined the sales staff of Carbic-Hoechst Corp., Montainside, N. J. J. CLYDE KELLY (center) has been appointed sales engineer for Southern Machinery Co., Greenville, S. C. WILLIAM R. FOX (right) has been appointed to represent Louis P. Batson Co., Greenville, S. C., in New England and Canada.

ARNOLD, HOFFMAN & CO., INC., Providence, R. I.—Has announced that W. C. Cobb has resigned as president. Dr. Thomas Richardson will succeed Mr. Cobb. . . . **BARNES TEXTILE ASSOCIATES,** Boston, Mass.—Has named L. W. Carney manager of the Boston office. J. C. Gray has been named manager of the Spartanburg, S. C., office. . . . **CHEMSTRAND CORP.,** New York, N. Y.—Has promoted F. G. Gronemeyer to vice president and executive director of industrial development. . . . **COTTON-MCCAULEY & CO., INC.,** Pawtucket, R. I.—Has named H. H. Robbins sales engineer. He will cover Georgia, Alabama, Tennessee, Mississippi, and Texas. . . . **DIEHL MFG. CO.,** Finderne, N. J.—Has appointed E. R. Zeek vice president in charge of research and engineering. J. J. Anderson has been named vice president in charge of marketing. . . . **DRAPER CORP.,** Hopedale, Mass.—Is closing its Pawtucket, R. I., plant. The company has also announced that it has agreed to buy from Willcox & Gibbs Sewing Machine Co. the patents and manufacturing and marketing rights for the Treufus automatic doffing machine in the United States, Canada, and Mexico.

E. I. DU PONT DE NEMOURS & CO., INC., Wilmington, Del.—Has started building expansion at its Lycra facilities in Waynesboro, Va. . . . **EQUITABLE PAPER BAG CO., INC.,** Long Island City, N. Y.—Has named Jack Kaltman general manager of the company's Flexible Packaging Div. . . . **FOXBORO CO.,** Foxboro, Mass.—Has named W. E. Vannah associate for advanced engineering . . . . **GENERAL ANILINE & FILM CORP., ANTARA CHEMICALS,** New York, N. Y.—Has named C. H. Nichols manager of the technical engineering department. Dr. R. C. Wilson has been named manager of the

NEW! AUTOMATIC SELF CLEANING

LINT-A-MAZE ARRESTOR

Cleans the air of...

* **LINT**
* **CHAFF**
* **FIBROUS MATERIAL**

AIR-MAZE LINT-A-MAZE FILTERS are specially designed to provide 98% or more efficiency in removing heavy concentrations of lint, chaff, leather cuttings and similar materials from the air. Brushes mounted on a chain carrier continually sweep and automatically clean the collector screens. Collected material is deposited in a hopper for reprocessing or sale. Lint-A-Maze filters offer these important advantages:

- Low initial cost . . . low operating cost
- Require less than 50% of the space normally needed
- Virtually eliminate maintenance – no rolls or blankets to replace, no washing or cleaning
- Handle wet or dry impurities
- Can be installed in any recirculating air opening, ventilating or air-conditioning system
- Available for airflow requirements from 7,000 to 150,000 CFM, can handle air velocities from 250 to 1900 FPM.

FREE! For additional information write for Bulletin No. 150.

AIR-MAZE DIVISION
CLEVELAND 28, OHIO
ROCKWELL-STANDARD CORPORATION

let's talk about...

Which of these LAUREL TEXTILE SPECIALTIES will help you cut your processing costs?

- ☐ Soaps—all titres—prepared to highest standards for every textile need—fulling, scouring and finishing. Raw stock, woolen and worsted goods. Scouring and dyeing all synthetic fibers. Soaping vat-dyed cotton yarns and piece goods
- ☐ Olapon—a series of synthetic compounds for scouring and dyeing all natural and synthetic fibers.
- ☐ Hydrosol—cresylic acid scouring and kier assistants. Especially good for use on wool and cotton.
- ☐ Mercerizing Penetrants—a series of cresylic acid type penetrants for use with all strengths of caustic soda up to 80° Tw. Non-cresylic types are also available.
- ☐ Laurel Transfer Removers—a line of products for all types of transfers to be applied by either wet or dry processing.
- ☐ Boil-Off Compounds—Boil-off oils. Triconate boil-off powders. Supersulfate neutral boil-off powders.
- ☐ Amine Condensates—straight and compounded to suit your requirements.
- ☐ Alkyl Aryl Sulfonates—Liquid, paste, and powder. Neutral or built for all purposes. Amine or sodium salts available.
- ☐ Sulfated Esters—for wetting, dyeing, rewetting. Preshrinking assistant.
- ☐ Lauramine 20—Superior packaged dyed yarn lubricant and softener. Does not yellow whites or alter shades.
- ☐ Lauramine 20-A—A liquid form of Lauramine 20. Predispersed for simplified use.
- ☐ Catamine SF—excellent cationic softener for natural and synthetic fibers. Easily dispersed. Particularly effective on Orlon and wool knitted fabrics.
- ☐ Sulfonated Oils—tallow, castor, olive, neatsfoot. Available straight or compounded for special finishing problems.
- ☐ Flame Retardants—a series of renewable type products to cover all requirements on cotton fabrics.
- ☐ Water Repellents—renewable type.
- ☐ Sizes—Resin and gelatine sizing and finishing compounds for all fibers and fabrics.
- ☐ Hydrocop & 3B Softener—Wax Emulsion WG, Wax Emulsion R, Ruxite A—for softening, conditioning, and lubricating all natural and spun synthetic yarns for knitting.
- ☐ Coning Oils—for all synthetic yarns—filament and spun.
- ☐ Hosiery Finishes—a complete line of resin hosiery finishes.
- ☐ Dullers, Weighters and Conditioners—a full line to meet your requirements.
- ☐ Antifoams—quick, easy-to-use. Readily dispersed; stable.
- ☐ Antistatic Compounds—non permanent types for all fibers.

Check your needs for complete details.

Laurel Brand — OVER 50 YEARS OF SERVICE TO INDUSTRY

Laurel

SOAP MANUFACTURING CO., INC.

TIOGA, THOMPSON & ALMOND STS. • PHILA. 34, PA.

Warehouses: Paterson, N.J. Chattanooga, Tenn. Charlotte, N.C. Greenville, S.C.

technical research department. . . . **HEYDEN NEWPORT CHEMICAL CORP., NEWPORT INDUSTRIES,** New York, N. Y.—Has named C. A. Brier product-sales manager for resin chemicals. F. J. Stief has been named product-sales manager, for terpene chemicals. . . . **HOBBS MFG. CO.,** Worcester, Mass.—Has named R. O. Winer sales representative in Chicago, Ill. Sherman Olson has been appointed sales engineer. Mr. Olson will cover the Ohio area. . . . **HOOKER CHEMICAL CORP.,** Niagara Falls, N. Y.—Has named S. A. Mattison director of public relations. . . . **INDUSTRIAL RAYON CORP.,** Cleveland, Ohio—Has promoted Ralph Richardson to assistant sales manager of its rayon-yarn division.

ALLEN W. DREW (left) has been appointed a vice president of Singer Mfg. Co., New York, N. Y. LEON P. BRICK (center) has been appointed vice president and director of sales for Raytex Chemical Corp., Allentown, Pa. S. A. BUNIS (right) has been named sales manager of Goulds Pumps, Inc., Seneca Falls, N. Y.

JOHNSON MOTOR LINES, INC., Charlotte, N. C.—Has named K. H. Stanley special sales representative in the Hartford, Conn., and Springfield, Mass., areas. . . . **KOPPERS CO., INC.,** Pittsburgh, Pa.—Has named J. H. Redmond vice president and marketing manager in the Tar Products Div. W. B. Jackson succeeds Mr. Redmond as manager of operations. . . . **LEESONA CORP.,** Providence, R. I.—Has announced that R. S. Pennock, vice president, has been elected vice president of the American Textile Machinery Association. . . . **METAL & CONTROLS, INC., DIV. OF TEXAS INSTRUMENTS, INC.,** Attleboro, Mass.—Has named John Ross manager of the research and development department. . . . **MINNEAPOLIS-HONEYWELL REGULATOR CO.,** Minneapolis, Minn.—Has elected K. H. Fisk, board chairman and chief executive officer of Allied Chemical Corp., a director. J. E. MacConville has been named sales coordinator for its special systems division. F. B. Akerson succeeds Mr. MacConville as regional industrial sales manager in Atlanta, Ga.

MIDLAND-ROSS CORP., Cleveland, Ohio—Has announced that its directors and directors of Industrial Rayon Corp., also in Cleveland, have approved the merger of the companies. If the merger is approved, Industrial Rayon will operate as a division of Midland-Ross. . . . **MONTECATINI CO.,** Milan, Italy—Has sold its patent rights for the production of Moplen in Sweden to Svenska Esso. . . . **NOPCO CHEMICAL CO., INC.,** Newark, N. J.—Is building a $7-million isocyanate plant in Linden, N. J. . . . **OILGEAR CO.,** Milwaukee, Wis.—Has opened a sales, service, and application-engineering office in Villa Park, Ill. . . . **PENNSALT CHEMICAL CORP.,** Philadelphia, Pa.—Has appointed E. M. Ott manager of marketing planning. . . . **RADIO CORP. OF AMERICA,** New York, N. Y.—Has named P. A. Quantz manager of product planning and methods for the Industrial Computer Systems Dept.

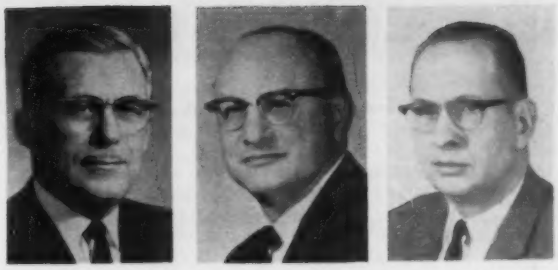
RIDGE TOOL CO., Elyria, Ohio—Has named Anton Janik manager of the newly created product-design department. . . . **ROBERTS CO., Sanford, N. C.—Has named V. N. Ruffner** personnel director. . . . **SACO-LOWELL SHOPS,** Boston, Mass.—Has elected H. E. Wolfson, A. H. Maremont, J. M. Comar, R. A. Graham, J. P. Buck, and C. A. Klaus to the board of directors. All are executives of Maremont Automotive Products,

. . . Begins on page 173

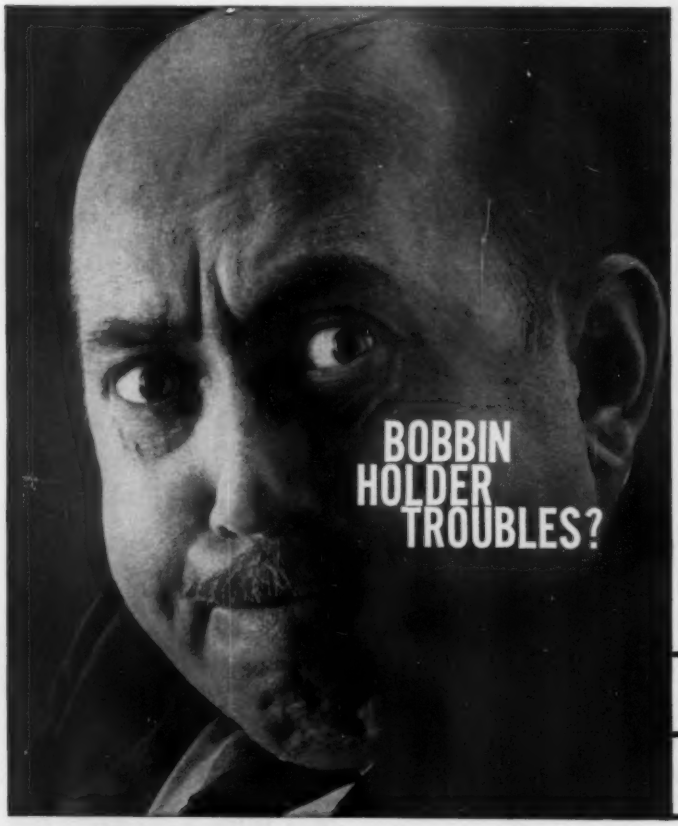
Inc. The company has also announced that J. W. Hubbard has been elected vice president in charge of machinery sales and W. F. Lowell, Jr., has been named vice president in charge of the international division. . . . **SINCLAIR PETROCHEMICALS, INC.,** New York, N. Y.—Has named H. B. Richardson chemical sales representative covering New York and New Jersey. . . . **J. E. SIRRINE CO.,** Greenville, S. C.—Has announced that G. W Cumbus has resigned as vice president and head of its structural department. J. H. Bringhurst, Jr., succeeds Mr. Cumbus as head of the structural department and M. M. Stokely has been named first vice president.

SPAULDING FIBRE CO., INC., Tonawanda, N. Y.—Has opened a new sales branch office in Springfield, Mass. Branch manager: R. A. Brown. . . . **SQUARE D CO.,** Park Ridge, Ill.—Has named W. R. Clarke to the newly created position of product manager in the marketing division. . . . **A. E. STALEY MFG. CO.,** Decatur, Ill.—Has promoted A. R. Kimbell to assistant manager of its Atlanta, Ga., branch office. . . . **TAYLOR INSTRUMENT COMPANIES,** Rochester, N. Y.—Has announced that its Instrument Mexico, S. A., has started production. . . . **TENNESSEE EASTMAN CO.,** Kingsport, Tenn.—Has joined with Chemische Werke Huls A. G., to form Faserwerke Huls GmbH, to produce and sell a polyester fiber. . . . **TEXIZE CHEMICALS, INC.,** Greenville, S. C.—Has elected T. D. Greer a vice president. Buck Mickel, executive vice president of Daniel Construction Co., has been elected a director. . . . **H. J. THEILER CORP.,** Whitinsville, Mass.—Has been named agent for the Knotex warp-tying machine.

ULTRASONIC INDUSTRIES, INC., Albertson, N. Y.—Has relocated in Plainview, N. Y. . . . **UNION CARBIDE CHEMICALS CO.,** New York, N. Y.—Has completed a new unit for producing aklyl amines in Charleston, W. Va. . . . **UNITED STATES STEEL CORP.,** New York, N. Y.—Has named N. M. Sted assistant general manager of sales in the General Sales Dept. of the American Steel & Wire Div. . . . **USTER CORP.,** Charlotte, N. C.—Has named Burton Sweet sales engineer for the Virginia, Tennessee, and New England territories. G. R. Shedd will cover the Georgia and Alabama area. . . . **VERONA DYESTUFFS,** Union, N. J.—Has announced that W. L. Swenson has retired as vice president. He will continue to serve as a consultant and will remain as a member of the board of directors. . . . **WARNER ELECTRIC BRAKE & CLUTCH CO.,** Beloit, Wis.—Has reorganized the Marketing & Sales Div. G. R. Harrod has been named general sales manager and will be responsible for the entire field-sales organization. . . . **WHITIN MACHINE WORKS,** Whitinsville, Mass.—Has announced that J. H. Bolton, Jr., vice president, has been elected president of the American Textile Machinery Association.



CHARLES S. BESHORE (left) has been named manager of manufacturing of Yale Materials Handling Div., Yale & Towne Mfg. Co., Philadelphia, Pa. WILLIAM P. PORCH (center) has been appointed treasurer of Textile Machine Works, Reading, Pa. DAVID A. KUNIHOLM (right) has been appointed manager of the Textile Machinery Div., Rodney Hunt Machine Co., Orange, Mass.



Bobbins falling off the creel? Yarn stretching and breaking because of inferior bearings? Limited to one size bobbin? Labor costs increasing due to excess creeling time?

Bendix offers *quality* bobbin holders that correct all these troubles. Both the Bendix® Spin Master (toggle) and Eclipse (spring) type bobbin holders are now offered with various bolt dimensions and thread sizes *that are interchangeable with your present installation.* Production losses can be kept to a minimum during change-over.

If you need or plan a replacement program, be sure this time to specify Bendix. The final cost is less.

Bendix-Elmira

Eclipse Machine Division—Elmira, New York

THE Bendix CORPORATION

Odell Mill Supply Co., Greensboro, N. C. North Carolina • Virginia

Export Sales: Bendix International 205 E. 42nd St., New York 17, N.Y.

Greenville Textile Supply Co., Greenville, S. C. South Carolina • Georgia Alabama • Tennessee

FURNISHED AS ORIGINAL EQUIPMENT BY LEADING TEXTILE MACHINE MANUFACTURERS

TEXTILE WORLD... News About Men

Edmund F. Adamo has been elected vice president in charge of manufacturing of Darlington Fabrics Corp., New York, N. Y.

Charles E. Annas has been named vice president of James Lees & Sons Co., Bridgeport, Pa., subsidiary of Burlington Industries, Inc., Greensboro, N. C.

Howard J. Barrowclough, former assistant director of operations, has been named director of engineering, Berkshire Hathaway, Inc., New Bedford, Mass.

Thomas R. Beaudet has been appointed supervisor of machinery audit and standard procedures, Hatch Mill, Columbus, N. C.

L. Bryon Benbow is the technical representative for Lyman Printing & Finishing Co., Inc., a division of M. Lowenstein & Sons, Inc., New York, N. Y.

Bert I. Bertelsen has been named president of Drycor Felt Co., Staffordville, Conn.

Robert Bilek, vice president of Ludlow Textile Products Div., Ludlow Corp., Needham Heights, Mass., has been named assistant to the president.

Edward X. Bilger has been elected vice president and director of Meiman Mills, Inc., and Meiman & Co., Inc., New York, N. Y.

W. S. Buckley has been appointed general superintendent of the Greensboro plant of J. P. Stevens & Co., Inc., Greensboro, N. C.

Richard F. Cook has been elected vice president in charge of production at Darlington Fabrics Corp., New York.

Charles F. Crowell has been appointed to supervise a new department of Kenyon Piece Dyeworks, Providence, R. I.

E. C. WHITMORE (left), director of product planning, and A. F. G. RAIKES (right), director of eastern operations, have been elected vice presidents of Bemis Bag Co., St. Louis, Mo.

Robert W. Dobson has been named manager of the Defiance, Ohio, plant of Johns-Manville's Fiber Glass Div.

Marvin B. Doster has been named personnel manager of the Athens, Ga., plant, Chicopee Mfg. Corp., New Brunswick, N. J.

Lyndon B. Emerich, general manager of Merrill Woolen Mills Div. and director of the parent firm's Rock River Woolen Mills, Janesville, Wis., has retired after 27 years' service.

Milton K. Emerson has been named vice president of plant operations at Housatonic Dyeing & Printing Co., and Hull Dye Works. Both plants are in Derby, Conn.

David Finkelstein has been named chairman of the board of Windsor Industries, the company that owns controlling interest in Bates Mfg. Co., Lewiston, Me.

DOUBLE RUB, FOUR BANK TAPE CONDENSER

Built in 48", 60", 72" widths for adaptation to all carding machines. Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25

DARY
Dary RING TRAVELERS...
SINCE 1898
THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY L. PHILLIPS, Treasurer, Taunton, Mass.
Consult your friendly Dary Representative:
JOHN H. O'NEIL Box 720, Atlanta, Ga.
JAMES H. CARVE Box 22, Rutherfordton, N. C.
CRAWFORD "JACK" ANTHER Box 2261, Greenville, S. C.

CIRCLE 176 ON READER SERVICE CARD
CIRCLE 258 ON READER SERVICE CARD

Daniel B. Fuller, vice president and head of merchandising and sales of the Fuller Fabrics Div., J. P. Stevens & Co., Inc., New York, N. Y., has announced that he will retire in May, bringing to a close a career spanning 40 years in the textile industry.

Mr. James L. Gardner has been named to succeed Mr. Fuller as general sales and merchandise manger of the Fuller Div.

William J. Geimer, manager of the Minneapolis Packaging Service for Bemis Bag Co., St. Louis, Mo., has retired after 44 years' service with the company. **Mr. Robert J. McDonald** succeeds Mr. Geimer.

Samuel K. George has been appointed sales manager of knitting yarns for the Textile Div., United States Rubber Co., New York, N. Y.

Ralph Gillespie has been promoted to assistant plant manager of Gayley Mill Corp., Marietta, S. C.

Arnold L. Ginsberg has been elected president of Windsor Industries, the firm that owns controlling interest in Bates Mfg. Co., Lewiston, Me.

Frank B. Hans has been elected a director of Chatham Mfg. Co., Elkin, N. C.

Paul Hazle has been appointed planning manager of the Fiber Glass Dept., J. P. Stevens & Co., Inc., Greensboro, N. C.

William E. Ix, Jr., of Frank Ix & Sons, New York, N. Y., has been renominated as president of the Textile Salesmen's Association, Inc.

Charles E. Kerchner has retired as superintendent of power, Cone Mills Corp., Greensboro, N. C.

Buell Little has been named assistant to the vice president and general manager of the Stead & Miller Div., Collins & Aikman Corp., New York.

Felix J. McGowan, sales manager of the Forstmann Women's Wear Div. of J. P. Stevens & Co., Inc., New York, N. Y., has retired.

Robert J. Mebane, Jr., has been elected president of the Chattanooga Yarn Association. Mr. Mebane is associated with Leon-Ferenbach, Inc., New York, N. Y.

Monroe D. North has resigned from the Fuller Div. of J. P. Stevens & Co., Inc., New York, N. Y.

H. M. Oakly has been named overseer of the card room at the Kendall Co.'s, Upper Plant, Pelzer, S. C.

Harry T. O'Neil has been named vice president of Continental Elastic Corp., New Bedford, Mass.

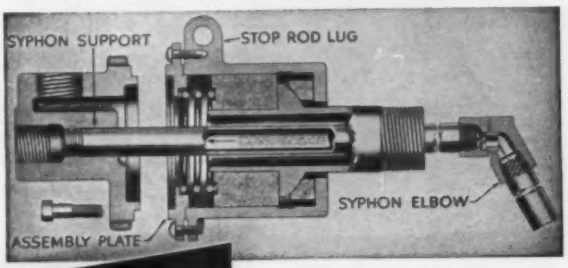
Glenn E. Pitts has been named manager of the New Choctaw Mills (Bulter, Ala.), Vanity Fair Mills, Reading, Pa.

William Proud has been named vice president of mar-

JOHN DEWITT DUSKIN, JR. (left), and HAROLD C. STANFIELD (right) have been named manager and assistant manager respectively of the new Production Dept. of West Point Mfg. Co., West Point, Ga.

TRY THIS on your Dry Cans and 30" Slasher Cylinders

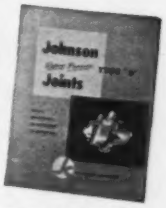
We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson ROTARY PRESSURE Joints
First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.



THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

CIRCLE 259 ON READER SERVICE CARD

CHAS. T. MAIN, INC.
Engineers

TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS

BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

ELECTRICAL, STEAM, DIESEL AND HYDRAULIC ENGINEERING
MACHINERY REORGANIZATION
WATER SUPPLY
INVESTIGATIONS
REPORTS AND APPRAISALS
CONSTRUCTION SUPERVISION

CIRCLE 260 ON READER SERVICE CARD

● OXY COLD BAR • CURASTAT • OXY COLD BAR ●

OXY COLD BAR • CURASTAT

COMPLETE ANSWER TO YOUR
STATIC PROBLEMS

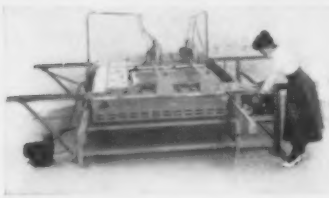
We will prove that Oxy Cold Bar or Curastat is the answer. Simple to install at the trouble spot . . . presto, your production begins to mount. Complete satisfaction guaranteed. Send us your machine specifications, and we'll forward recommendations, literature and prices.

HERBERT PRODUCTS, INC.
188 LINDEN AVENUE • WESTBURY, N. Y.

OXY COLD BAR • CURASTAT

● OXY COLD BAR • CURASTAT • OXY COLD BAR ●

Complete Screen Making Machinery



- Pneumatic Stretching Frame
- POLY-COP Copying and Adding Machine
- Varnish Withdrawing Machine
- Drying Cabinets
- DUPLEX Dyestuff Strainer
- Longitudinal and Transversal Rakes
- Sample Steamer
- Chemicals for Screen Making

LÜSCHER BROTHERS LTD, (Obstalden)
LEUTWIL near Aarau (Switzerland)
CIRCLE 261 ON READER SERVICE CARD

NASH

Automatic Machinery For Cleaning And Refinishing QUILLS And BOBBINS

NASH *J. M.* **NASH** *Company, Inc.*
131 Jackson St., Oshkosh, Wisc.
"Special Finishing Machines Since 1890"

CIRCLE 262 ON READER SERVICE CARD

READERS . . .

Do you need more information on a product or service advertised?

USE READER-SERVICE CARD FOR PROMPT REPLY.

News About Men

CLYDE D. COX has been named superintendent of the Walhalla (S. C.) plant of Chicopee Mfg. Corp., New Brunswick, N. J.

B. P. BARNET has been elected vice president of Fulton Bag & Cotton Mills, Inc., Savannah, Ga., a subsidiary of Fulton Industries.

keting for William Skinner & Sons, a division of Indian Head Mills, Inc., Cordova, Ala.

Erwin P. Sexton, Jr., has been named head of the quality-control department at the Woodruff, S. C., plant for Abney Mills, Greenwood, S. C.

Raymond B. Sharwell has resigned as active head of American Carpet Mills, Inc., Cartersville, Ga.

Harry L. Spillman has been promoted to assistant manager of the control section of Erwin Mills, Inc., Durham, N. C.

Harold C. Stanfield has been named assistant manager of the new Production Dept. for West Point Mfg. Co., West Point, Ga.

William E. Stratton has been named chief engineer for Berkshire Hathaway Inc., New Bedford, Mass.

Marion W. Stribbling has been elected vice president of manufacturing, Habersham Mills, Habersham, Ga.

Doma A. Watson has been named superintendent of the Athens (Ga.) plant for Chicopee Mfg. Corp., New Brunswick, N. J.

Russell Wiggin has been named chief chemist, American Thread Co., New York.

J. Clyde Wilson has been elected president of the National Cotton Council.

OBITUARIES

Harry Atherton, 82, past president and treasurer of C. E. Riley Co., Boston, Mass., and a director of West Point Mfg. Co., located in West Point, Ga.

James L. Coker, III, 56, president of Sonoco Products Co., Hartsville, S. C.

Jeff Dadisman, 86, retired superintendent of the former American Hair & Felt Co., Chicago, Ill.

Harry Duke, 85, president of Dinsmore Mfg. Co., Salem, Mass.

Campbell D. Garrett, 60, director and vice president, Cotton Div., J. P. Stevens & Co., Inc., New York, N. Y.

Nathan L. Hall, 76, retired after 42 years' service with Wellington Sears Co., Div. of West Point Mfg. Co., West Point, Ga.

Harry Myer, president of M & M Knitting Mills, Inc., Philadelphia, Pa.

William H. Rigney, 77, former superintendent of the former Rodman Mfg. Co., North Kingstown, R. I., and superintendent of Westerly Woolen Co., Ashaway, R. I.

Ralph Whitaker, Jr., 33, vice president of Fred Whitaker Co., Philadelphia, Pa.

George N. Winder, 63, vice president of Woolens & Worsteds of America, Inc.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 11: 255 California St.

POSITIONS VACANT

Wanted: Assistant dyer or shift dyer—Experienced in synthetics. Good future with growing concern located in the South. State experience and salary requirements. P-6166, Textile World.

Wanted Card Room Foreman for medium size mill located in North Carolina. Address reply to P-6267, Textile World.

POSITIONS WANTED

College graduate. Ten years U.S. and foreign supervisory experience in synthetic and cotton yarn manufacturing. Seeking foreign location as Supt., Asst. Supt., or Consultant. Resume upon request. PW-6038, Textile World.

Textile Superintendent—Designer and A-1 loom man. Wide experience on plain and diversified fancy weaving on cotton synthetics and saran. Available on short notice. PW-6272, Textile World.

Foreign Assignment Wanted—Textile Technician with 20 yrs. exp. in Bleaching, Dyeing and Finishing. Presently employed as Supt. of a Silk Dyeing Printing & Finishing co. Thoroughly experienced with Cottons, Synthetics, Silk & Blends. PW-6400, Textile World.

Rashel lace mechanic with extensive experience desires responsible position, capable of taking complete charge of operation, analysis, layout. Relocate. PW-5836, Textile World.

Card Room Overseer Available. Have some spinning experience—High School and I.C.S. graduate. Age 47. 10 years as overseer and 13 years as asst. overseer on carded and combed cottons, Synthetics and blends. References can be furnished as to ability, production, quality and cost control. PW-6374, Textile World.

Bleachery Open Stock Clerk, 30 years exp. Location immaterial. Contact: PW-6343, Textile World.

Sales—Textile Engineer, age 33, experienced in textile machinery sales and dyeing and finishing supervision, desires responsible sales challenge. PW-6327, Textile World.

Long experience Woolen Carder and Spinner presently employed, seeking change. Experience both on woolen and synthetics yarns. PW-6258, Textile World.

SELLING OPPORTUNITIES WANTED

Established Manufacturers Representative selling Automotive Industry seeks additional textile product for automobile body interiors. RA-4452, Textile World.

Business with thirty years experience, contacting manufacturing industries in the Eastern New England area, and doing precision machine works, machine repairing and engineering. Located on Route 128. Expanding sales operations and desire association as manufacturers representative to industries in the New England Area. RA-6262, Textile World.

SUPER VALUES IN TEXTILE MACHINERY

1—BRUSH, P&W., 90", 3 Section, Ball Bearing Covered Brush Rolls.
4—WASTE CARDS, D&F., 48"x48", Single Cyl., Metallic Wire, Hopper Feeds.
1400—New FIBRE ROVING CANS, 12"x36", Continental Fibre Co.
1—YARN CONDITIONING & STEAM. Mach., R&L., S.S. Lined, Auto. Controls.
1—CONDITIONING Machine, Sjostrom, 64", Steel Frame, B.B. Rollers, Pump.
27—WOOL COMBING MACHINES, Schlumberger, Delete, Segment width 310 mm.
1—STOCK CONDENSER, P&S., Model 549, Double Drum, 1½ Hp. Motor Drive.
1—DESPECKING MACH., P&W., 89", Adj. Tension Leton, Folder Takeoff, M.D.
1—HOPPER FEED, Harwood, 54", Bottom Apron, Spike Apron, Comb.
5—GARNETTS, 2 Cyl., 20/20, 18" Doffers, Lappers, Comp. Rolls, Slitter.
3—CARD GRINDERS, D&F., Roy, Traverse type, 48", 60", 12", 15" Wheels.
1—CARD GRINDER, S&F., 60", Floor type, Wheel 4½" face x 12" dia.
1—INSPECTING & WIND. MACH., Blake, 58", tube to tube, inclined table.
1—LONDONIZING (Sponging) MACH., P&W., 80" Steamer, S.S. Table, Batcher.
1—MEASURING & INSPECT. MACH., Measuregraph, 64", tube to tube, V-S Drive.
1—DOUBLE ACTING NAPPER, D&F., 80", 24 Belt Driven Rolls, Folder, M.D.
1—SINGLE ACTING FELTING NAPPER, Woonsocket, 90", 22 Rolls.
2—PERALTAS, 48", 60", Spring Pressure, Leton and Takeoff Rolls.
1—PADDER, 80", 2 Rubber Rolls 11" dia., Dead Set, Stainless Steel Pan.
1—MIXING PICKER, D&F., 60", 6 Bar, Feed Table, Feed Rolls, Metal Bonnet.
1—SUPER PICKER, P&S., 48", #512, Pin Lagged Cylinder, Feed Table.
1—RAG PICKER, Dodge, B.B. Cyl. 30"x20", Steel Faced Lags, Feed Table.
1—HAIR PICKER, C&M., Atlas #3, type TB, 12 Bar, Ball Bearing Cylinder.
2—ROTARY PRESSES, Voelker, 65", 86", Double Bed, Brass Pressure Plates.
2—QUETSCHES, Henniken, V. Vlaan., 2 and 3 Roll, B.B. Immersion Pans.
1—QUILLER, Abbott, 30 Spindle, 10⅛" Bobbin, Hopper Feed, Motor Drive.
2—SHEARS, C&M., 65", Flat Blade Velvet Type and Chisel Blade Woolen.
1—SHEAR, P&W., Centurial, 84", 3 Blade, Sand Rolls and Turning Device.
2—RING TWISTERS, Collins, 200 Sp., 3¼" Ring, 4¼" Ga., 7½" Trav.
1—TWIST TESTER, Suter, 20" Model, Dial Counter, Quick Release, Magnifier.

McDOWELL ASSOCIATES, INC.

General Offices 51-E 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: TA 8-3211

CIRCLE 400 ON READER SERVICE CARD

TEXTILE AUXILIARIES INC.

"TOP QUALITY EQUIPMENT AT LOW PRICES"

1—Butterworth Tenter Frame 75' long x 200" wide, complete with tension bars, take off, Housing 37' x 20' x 7' 8", turbine blowers, produce 30 degree F. and Chromolux setting unit, 213" rods, 450 degrees F., blowers, fans, etc.
4—Stainless Steel Dyetrucks 30" x 36" x 29" deep with rubber wheels.
1—6' and 3—4' x 5' x 30" Stainless Steel Dye Becks with set of Riggs Lombard pneumatic Squeeze Rolls, 7¼" diameter, stainless steel bottom roll and rubber top roll.
1—72" 2 Roll Simpson Cut-Off Winder.
2—90' x 50" Winsor & Jerauld Swing Tenters, #5 Stainless Steel Clips
1—40' x 54" Winsor & Jerauld Frame, #7 High Speed Chain.
1—30' x 72" Butterworth Tenter Frame.
1—5 Color RB & F. Printing Machine, 44", complete with Backrigging, Dry Cans, motor, etc.
300 Braiders from 12 to 72 Carriers.
Reeves Drives, All Sizes, Opened and Closed.
Stainless Steel Tanks, Copper Jacketed Mixing Kettles.

We carry spare Padder & Calender Rolls all sizes, also motors from 1 HP to 100 HP.
These are only a few items: For Detailed List: Write, Wire or Phone:

Dexter 1-9650 Dexter 1-8837 Providence, R. I. 146 West River Street

PROVIDENCE, R. I.

CIRCLE 401 ON READER SERVICE CARD

TEXTILE PRODUCTION MANAGER

"Independent N.E. concern needs outstanding aggressive individual with initiative to assume complete responsibility for expanding division. Should have textile engineering degree with minimum of five years' supervisory position, preferably with high speed narrow looms. Salary open, but in low five figure range."

P-6352, Textile World
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

Your Inquiries to Advertisers Will Have Special Value . . .

—for you—the advertiser—and the publisher, if you mention this publication. Advertisers value highly this evidence of the publication you read. Satisfied advertisers enable the publishers to secure more advertisers and—more advertisers mean more information on more products or better service—more value—to YOU.

CHICOPEE MANUFACTURING CORP.

Subsidiary of Johnson & Johnson

PRODUCTION SUPERINTENDENT

A stable and progressive affiliate of leading surgical dressings manufacturer is looking for an outstanding production man to fill a key mill position in Northeastern U. S. Candidates should have degree in engineering or textiles with minimum of five years' experience in responsible supervisory position. Reply in confidence to:

JOHN L. DUGAN, Jr.
Industrial Relations Director
Chicopee Manufacturing Corp.
New Brunswick, N. J.

Somebody—Somewhere,

needs your idle equipment! Reach that buyer quickly and economically thru the

"SEARCHLIGHT SECTION"

The meeting place of Used Equipment Buyers and Sellers

TEXTILE MACHINERY FOR SALE

70—C & K Model S6 Looms, 2x1 box, 58"—1951
15—C & K Model S6 Looms, 4x1 box, 56"—1949-50
13—C & K Model S6 Looms, 2x1 box, 56"—1949
26—C & K Model S6 Looms, 4x1 box, 54"—1948
12—C & K Model W3 Convert. Looms, 64"—1940
24—C & K Model W3 Convert. Looms, 82"—1947-8
148—Spdls. Whitin Schweiter Hi Speed Quillers—1947-51
1—Abbott Paper Cone Winder, Model #65, 100 spdls., 8°4' cone, Age 1948
1—B-C Portable Tying-In Machine, Model LC—Age 1951
1—Obermier Stainless Package Dye Machine—300 lbs.
2—Smith Drum Stainless Pkg. Dye Machines, 500 lb.—Age 1947
1—Holdsworth Intersecting Bradford Gill Box—1953
1—Fletcher Double Deck Uptwister, 40 spdls.—1953
1—Brownell Twine Layer, 12 spdle., ½ lb. tubes
2—Reiner Hi-Speed Warper, 54¼" wide, 30" dia. flange, elec. beam doffers—1951
10—Sets Cloth Guiders, air and spring type
1—Franklin 8-color Print Machine, 67" wide
1—Fletcher stainless 30" Extractor, Auto. Timer
1—Smith Drum Paddle Dye Machine, stainless, 10 lb.—Age 1955
1—Hussong Stainless Skein Dyer, 5 lb.—Age 1956
1—Rodney Hunt Stainless 8' Tensitrol Washer—1956
1—Burlington Stainless Hi-Pressure Beam Dyer, 50-56" wide, with beams, controls—Age 1959
1—Continuous Stainless Bleach Range—Age 1954; Wiesner-Rapp Saturator, Becco 1500 yd/hr, "J" Box
1—Morrison Continuous Open Width Dye Range 60"—Age 1948; 2—Williams Units, 3 stainless washers, Pneu. Padder 15 ton, Vacuum Extractor
1—Werner Hydraulic Schreiner Calender, 47" face, 50 ton, 20 HP motor, 2 spare rolls, Age 1954
1—Verduin Hyd. Padder, 2 rubber rolls, 60" wide, 15 ton
1—Morrison Micro-Set Padder, 2 rubber rolls, 60" wide, 8 ton
1—R.H. Stainless 40" Dye Unit, Pneumatic Padder, temperature controls
1—R.H. Stainless 2 comp't Crabb, 80" wide, 2 squeezers, motor
1—Winsor & Jerauld Tenter Frame, 30' long, 70" wide
1—Proctor & Schwartz Loop Dryer, 60' long, 126" revolving sticks, steam, temperature controls, Age 1948
1—Rodney Hunt Stainless Encl. Dye Box, 16' wide, 47" deep
2—Rodney Hunt Stainless Encl. Dye Boxes, 10' wide, 47" deep
1—Van Doorne Stainless Encl. Dye Box, 12' wide, 42" deep
1—Van Doorne Stainless Encl. Dye Box, 4' wide, 42" deep
1—Van Vlaanderen 3 roll Calender, 60" wide, lever set
3—Werner Stainless Encl. 70" wide, Dye Jiggs, no motors
1—Meadows Hyd. Embossing Calender, 72" wide, 25 ton, 1949
12—Stainless Steel Dye Hse Trucks, 60" long, 30" wide, 35" deep

46—Warner-Swasey "Sulzer" Automatic Shuttleless Looms, 80" wide, 30—Looms—Standard 8 harness, 16—Looms Staubli Heads, 25 harness. Age 1950-3. Complete parts room.

ALLIANCE TEXTILE MACHINERY CORPORATION
APPRAISALS • TEXTILE MACHINERY • LIQUIDATIONS
37 NORTH 3RD STREET • ALLENTOWN, PENNSYLVANIA • HEMLOCK 4-4897-8

CIRCLE 402 ON READER SERVICE CARD

LIQUIDATING

Modern Dyeing and Finishing Machinery Priced for Immediate Removal

Partial List

4—8' wide All Stainless Steel Dye Becks, 50"-60" deep.
1—10' & 1—12' All Stainless Steel Dye Becks, 50" deep.
1—Rodney Hunt 12' Tru-Shade Enclosed Dye Beck, type 316 stainless steel.
12—50"-70" All Stainless Steel Dye Jiggs.
1—80" Double Acting Napper, 24 rolls.
1—62" Selvedge Marking Machine.
3—Singers, 60"-80" widths.
1—57" Compressive Shrink Machine.
1—60'-60" Tenter Frame with Palmerette, M. G. Set.
1—Butterworth Junior Bleach Range.
8—Scutchers, 48"-78" widths.
1—3 roll 50" Penumatic Calender, 15 ton.
1—66" Hinnekens Boil-off Machine.
1—Set of 8—60" x 23" diameter Stainless Steel Dry Cans.
1—Set of 6—54" x 48" diameter Stainless Steel Dry Cans, jacketed.
1—Set of 5—102" x 23" diameter Stainless Steel Dry Cans.
3—Tumblers 46" x 120", fans and motors.
1—2 roll 50" Padder, 7½ ton pressure.
9—Print Machines, 6—10 colors, 40"-64" widths.
1—60" Button Breaker, stainless steel rolls.

Your inquiries are invited *We welcome your inspection.*

INDUSTRIAL PRODUCTS of AMERICA
River Rd. and Maple Ave. P. O. Box 337
Fair Lawn, New Jersey Tel: SWarthmore 6-1000
IPA SOUTHERN, INC.
610 South Carolina Nat. Bk. Bldg. Greenville, South Carolina
Tel: CEdar 2-3561

CIRCLE 403 ON READER SERVICE CARD

Searchlight Equipment Locating Service

No Cost or Obligation

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.) No charge or obligation.

First, read the dealer ads on these pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

SEARCHLIGHT
Equipment Locating Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

SEARCHLIGHT
Equipment Locating Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following used equipment:

.....
.....
.....

NAME .....
TITLE .....
STREET .....
COMPANY .....
CITY .....
ZONE .....STATE 4/61

LIQUIDATING TEXSTYLE CORP.

CLIFTON, N. J.

PRINTING

5—Rice, Barton & Fales—Textile Machinery 8 color Print Machines, 50-60" wide
3000—Engraved Copper Rollers
4—Vat Agers
1—R. B & F Mandrel Jack

DYEING

1—Burlington Stainless Steel Beam Dyeing Unit
8—Textile & Werner Stainless Steel Dye Jiggs, 50"—70"
13—Stainless Steel Dye Boxes,
4—Troy S.S. Tumbler Washers

FINISHING

1—Tenter Finishing Range, 60'; National gas housing 1954
1—V. V. Palmer Tenter Unit, 40'
1—V. V. 3 roll calender, 60"
1—Verduin Hydraulic Calender, 60", 3 roll, 40 ton
2—V. V. Heavy Duty Tenter Frames, 60' x 66"
1—Verduin 2 roll Padder, 50"
1—Marlow Stainless Steel 3 compartment Washer
1—Morrison, Button Breaker, 60"
61—SS Dry Cans 47" 30 lb. pressure
44—SS Dry Cans 142" x 23" dia.

130 Draper XD Looms, 54" reed, Diehl & motor, 1947-51

OTHER MODERN TEXTILE MACHINERY

36—Whitin F-2 Spinning Frames, 3½ ga., super draft
12—Atwood Re-Draw, 68 spindles, 1950
56—Universal #10 Uptwisters, 184 spdls., 2 lb. headless pkge., 1950
3—Sipp-Eastwood Warpers, 1949 & Creels
3—Abbott Quillers, 1955
36—Whitin Spinning Frames, 3¼" ga., Casablanca, 7½ hp. Motors
62—Saco-Lowell Spinning Frames, 3¼" ga., Casablanca, 7½ hp. Motors
74—C & K W-3 AC Looms, 82"
234—C & K Big 6 S-6 Looms, 56" B.S., 1948
1—Cocker Indigo Dye Range, 1948
4—Venango S.S. Package Dye Units, 1948, 3-500 lbs. each

Republic TEXTILE EQUIPMENT COMPANY

APPRAISALS • PURCHASE AND SALE TEXTILE MACHINERY • LIQUIDATION OF MILL PROPERTIES

40 Worth Street, New York 13, N. Y. • COrtlandt 7-1590

CIRCLE 418 ON READER SERVICE CARD

COMMISSION SPINNING WANTED

Woolen system, any size, any fiber, 180 miles from New York. Write to:

WW-6280—Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 422 ON READER SERVICE CARD

FOR SALE

CLSH SHEETER

One good used 45" Beck Model CLSH Sheeter. Suitable for cloth and textiles. New 1951. For further particulars address

FS-6213, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 423 ON READER SERVICE CARD

CONTRACT WEAVER WANTED

Leading specialty textile manufacturer seeks contract weaver with open time on jacquard looms.

CWA-6353, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIRCLE 424 ON READER SERVICE CARD

WANTED

2—Sets dividing rolls for Davis & Furber 48 inch tape condenser, 96 ends.
2—Whitin K4A type tape condensers 48 inch, 96 ends.
100—15 x 36 cans.
2—Worsted can Creels.
6—Late model worsted spinning frames.

TRANS-AMERICAN SPINNING MILLS, INC.
18 Martine Street Fall River, Mass.

CIRCLE 425 ON READER SERVICE CARD

FOR SALE

1—Foster Autofill winder 4 sp.
Disc & finger tensions
OL winder supplies
Chenille cutter supplies
Guides & slub catchers

AMBLER TEXTILE MACHINERY CO.
S. E. Cor. Bodine and York Streets
Philadelphia 33, Pa.

CIRCLE 426 ON READER SERVICE CARD

WANTED—COMMISSION WEAVING

New England mill with modern worsted weaving equipment desires to contact principals who can use volume production.

CWW-6283, Textile World
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

CIRCLE 419 ON READER SERVICE CARD

FOR SALE

20—Crompton & Knowles Terry Towel Looms, 37½" between swords, 33" reed space, 16 harness, double index dobbies with multipliers, 4x1 box automatic, Terry motions, 4 cell magazine for 8¾" quill, electric stop-motions, 3 beams per loom.
40—Draper Model XK looms, 50¼" reed space for 46" cloth, with C & K #7 dobbies, 20 harness, center filling fork, 24" beams.
50—Crompton & Knowles Model S-6 Looms, 56", 2x1 box, center fork, 32" beam heads, year 1948.

IT **INTERSTATE TEXTILE EQUIPMENT CO., INC.**

P.O. Box 3371 CHARLOTTE 3, N. C. Tel. 375-7702 • EMPIRE STATE BLDG., New York 1, N. Y. PEnn. 6-0451

CIRCLE 420 ON READER SERVICE CARD

All Types of Used Machines for Knit Underwear Mills

SCOTT & WILLIAMS and WILDMAN RIBBERS 8 to 16 cut, Sizes to 24"
TOMPKINS SPRING NEEDLE TABLES, All sizes and gauges
WILDMAN SPRING NEEDLE FBSS
WILLCOX & GIBBS FLATLOCKS, MERROWS, SINGER & METROPOLITAN SEWING MACHINES
Also Various types of SPECIAL MACHINES, CUTTING—CALENDERING—PRESSES, Etc.
Send us your Inquiries.

MOHAWK VALLEY KTG. MACH. CO.
Dwyer Ave. at Pixley St. Utica 2, N. Y. Phone 4-8109

CIRCLE 421 ON READER SERVICE CARD

LIQUIDATING

PRICES SLASHED

Modern Dyeing & Finishing Machinery of Ming Toy Dyeing Co., Paterson, New Jersey

MUST VACATE BUILDING

1—64" x 70' Enclosed Tenter Range, 60' Housing, Pneumatic Padder, Pre-Heater, Heat Setting Roller Curer, Hydraulic Batcher, Auto. Cut-Off.

1—Tenter Range 50' x 60", 60" Hydraulic Padder and Palmerette.

1—Tenter Range 60" x 50", 60" Pneumatic Padder and Palmerette.

3—Werner 70", 60" and 50" Pneumatic Padders, 2 rubber rolls.

1—P & S 60' Loop Dryer, 7 Fan 125".

1—P & S 30' Loop Dryer, 5 Fan 101".

1—V.V. Tenter 60" x 40', S.S. Clips.

1—Morrison Tenter 50" x 50', S.S. Clips.

1—66" Heat Setting Roller Curer.

1—60", 2—50" V.V. 3 roll B.B. Calenders.

1—52" Hinnekens Boil-Off.

1—Open Width Washer 65", 3 compartments, 3 sets of rubber squeeze rolls.

1—65" Singer-long flame burners with motor driven brushes.

1—65" Textile Singer.

1—V.V. 73" B.B. Decatur.

1—60" and 1—50" V.V. Tubers.

2—68" and 64" Progressive Examiners.

1—54" V.V. Double Embosser.

6' to 12' S.S. Lined Dye Becks.

3—51" to 62" Beamers.

3—60" Eastwood Floppers.

Chain Hoists 2 ton and ½ ton.

3—Water Softeners, fully automatic, 10' x 10', 8' x 10'.

1—750 HP Boiler, Steam Generator, Water Walls, 80,000 lbs. Steam per Hr.

3—Filter Tanks.

2—Maxon Heaters.

Machine & Carpenter Shop Equipment.

Atlas Launderometer.

Office and Miscellaneous Equipment.

Building for sale or rent, 85,000 sq. ft. Sprinklered, free water.

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.

SHerwood 2-1367-8

CIRCLE 408 ON READER SERVICE CARD

FOR SALE

Good Machinery—Low prices

30—Drying Cans 80" x 30" dia.
1—Sipp E. Hy Speed Warper 83".
S.S. Dye Jiggs 50" & 60".
1—VV 3 Roll Calender 60".
Cottage Steamer—8' x 12'.
33—Spdle Whitin Schweiter Auto Quillers.
1—RB&F 44" 5 color print machine.
1—Hinnekins Moire Calender 50" New.
1—Hercules Extractor 50" Copper Basket
2—SS Tru Shade 6' Dye Tubs, with SS Hoods
1—Johnson Sizer, 5 Copper Cans 66" Wide.
Air Compressors—5 HP & 10 HP.

STAVE & KESSLER
106 Kearney Street
P. O. Box 1611 Paterson 16, N. J.

CIRCLE 411 ON READER SERVICE CARD

WE OFFER FOR SALE

6—48" C & K 4 X 4 Sample Looms
4—10B Twisters, 1948, 4½" Ring
1—Sipp Model EN Warper, 800 End Creel
5—B-C Knotters, Model LC, Hand & M.D.
2—B-C Knotters, Model LL, 15" & 56", M.D.
250—Kidde Double Disc Tensions
1—Johnson 9 Can Slasher, 30 X 60 SS Cans
1—I.R. 12 X 8 Compressor, 30 HP M.D.
50M—14" Drawtex Heddles and Frames
500—22" Loom Beam Heads, 130T, 8P, Flush
50—Allen Warper Beams, 54½ X 28 X 12
5M—Abbott Pinboards, 80 & 96 Pin

INDUSTRIAL MACHINERY COMPANY

32 Boomer Street P. O. Box 261
Fall River, Mass. OSborne 4-8161

CIRCLE 412 ON READER SERVICE CARD

$3,000,000 Liquidation:
Chemical Plant at Orange, Texas

Type 316 stainless steel tanks, kettles, heat exchangers, columns, stills, crystallizers, centrifugals, pumps, valves, etc.

WONDERFUL VALUES, SEND FOR LIST

PERRY EQUIPMENT CORP.
1430 N. 6th St. Phila. 22, Pa.

CIRCLE 413 ON READER SERVICE CARD

LOW PRICES FOR LATE MACHINERY

2—Platt Cards, 40"
4—Whitin 1949 Lap Winders
12—Deliveries Whitin bi-coil draw, 14", 1949
2—Whitin Speedomatic Quillers, 1956
2—Abbott Quillers, 120 sp., pinboard
3—Abbott 12 sp. Radial Quillers, pinboard
1—Universal Creel, 350 end
1—Sipp Eastwood creel, 700 end
4—Terrell Roving Bobbin Strippers
6—Terrell Quill strippers, Model K & L
6—B/C port. Warp Tying machine, LC, K, LS, LL
3—Cloth folders, 44" + 47½", with air lifts
2—Haskell Dawes "S" Formers for rope, 1956
1—Edmunds high speed Layer, ⅝" rope, 8k/std.
20 M—8 x 9½ & 11 x 14 & other cordage spools
19—Reelers, re-reelers & coilers for rope
1—Cloth Trimmer, 72", with Kaumagraph
4—48" Dye Jiggs, stainless steel, excellent
6—S.S. Tanks + Kettles, 60, 80, 200 to 1000 gal.
17—KK Looms, 44"
6—Stainless Steel Hook Reeds, 8-15 dent
15—Reeves transmissions, size #00 to #5
300—Parks-Cramer humidifier heads
750—New Hank Clocks & used Pick Clocks
500 M—Quills, #3, 5, 6 butt, all lengths
12—Platform scales
2000 M—Heddles, 10"-16", also selvage heddles
15 M—Single & Double Rod Harness Frames
5000 M—Drop Wires, all types
35—Textile motors, new, 2 HP 900, 3 HP 900 5 HP 900, 20 HP 1800. Excel. prices.
V-Belt Sheaves "MAGIC GRIP"!
Your distributor can now buy this famous sheave formerly made by Allis-Chalmers. In stock we have 500,000 lbs. of sheaves and 6,000 lbs. of belts. Bushings are now made in our shops.
Sizes up to 48" 10 groove "D" section in stock
SPECIALS on 10 days delivery

MACHINERY SALES CORP.

131 Court Street, P.O. Box 367
New Bedford, Massachusetts Tel: Wyman 9-6273

CIRCLE 409 ON READER SERVICE CARD

WE OWN & OFFER

500—West. Fluorescent Fixtures—48"
500—V.R. 3 Shift Reset Pick Counters
2—C&K Sample Box Looms 24"—Dobbys
1—Sipp Creel 760 Live Ends
6—Hacoba Quillers—Narrow Fabric
1—Glodde Quiller—Narrow Fabrics—16 Spdles
12—N.E. #3 Braiders—16 Carrier
1—Hermas 80" Inspecting Machine
1—Cocker 80" Reheamer—Var. Speed
1—Scott J3 Serigraph Tester
3—A. Suter Twist Counters w/Tension
24—W2 Convertible Looms 82"

"Heddles, Harness Frames, Drop Wires"

PAWTUCKET MILL SUPPLY CO., Inc.

240 YORK AVE. PAWTUCKET, R. I.

CIRCLE 414 ON READER SERVICE CARD

3—S.S. ROTARY DRYERS—300, 100 & 50 LBS.

2—U. S. High Speed Doublers—10" Trav.—4¾" Rings—1958

1—S.S. AUTOCLAVE—64" x 73" CONTROLS AND PUMP YEAR 1959

4—Fidelity Reelers—2 Arms
1—Whitin Model D Ring Twister
11—Unirails—Model 501
8—U. S. HDless Pkg. Twisters
70—Foster 75A Winders

S.S.Skein Dyers—1-12, 1-10, 1-7 Arm
4—Tubers w/ Yardage Clocks
10—Atwood & Sipp Redraws
3—Atwood 10B Doublers
4—H&W Steam Boxes

100 UNIVERSAL NO. 50 WINDERS

BOBBINS—SPOOLS—QUILLS—*All Sizes & Types*

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN PA. Phone 3-7545

Complete mill for making stretch yarn. Complete mill for a slitting & reinforcing metallic yarns.

CIRCLE 410 ON READER SERVICE CARD

Attractively Priced . . . For Immediate Delivery
1—54½ Roiner Warper—electric beam doffing
30—Section beams—54½x30"—Hayes Mfr.
2—LS Barber Colman tying in machines—#244
94—C&K 92" Convertible Looms
1—Roiner creel—1,000 live ends
1—Roiner creel— 800 live ends
For information concerning this equipment, contact
JACOB SALT, 421 7th Avenue, N.Y.C.
or P.O. Box 1535, Paterson, N.J.
NY Phone CHickering 4-8556

CIRCLE 415 ON READER SERVICE CARD

BRASS **PIN-PLATES** All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

● Pins in Stainless, Monel, Phos Steel.
All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 406 ANDERSON, S. C.

CIRCLE 416 ON READER SERVICE CARD

Your Inquiries to Advertisers Will Have Special Value . . .

—for you—the advertiser—and the publisher, if you mention this publication. Advertisers value highly this evidence of the publication you read. Satisfied advertisers enable the publisher to secure more advertisers—and—more advertisers mean more information on more products or better service—more value—to YOU.

SUPERLOFTS

4—MODEL 551

212 Spindles each. 142,000 R.P.M's. Spindles rebuilt 1960. 2 lb delivery.

6—MODEL 550

216 Spindles each—spindles rebuilt 1960. 2 lb delivery.

6—1951 SKEIN DYE

SMITH DRUM & CASCADE MACHINES

3—3 ARM
2—5 ARM
1—7 ARM

LOOMS . . . .

19—C&K W-3AC
1953—84" CAM TYPE

2 x 1 BOX, 8 HARNESS CAP.—MOTORIZED
3 HP/440 VOLT/60 CYCLE MOTORS

6 ATWOOD 10-B DOUBLER TWISTERS . . . .

100 Spindles Per Machine 7" GA. . . 8" TRAVERSE . . BOTTLE WIND . . 2 LB. CAPACITY . . LIKE NEW CONDITION

4-H&B SPINNERS

200 Sp. Ea—4½" Gauge—3¼ Ring, 9¼ Trav. Pneumatic

2—U. S. TEXTILE DOUBLERS

JUMBO TYPE—5 LB. CAP. . .
1 - 48 Spindle & 1 - 24 spindle—1958 . . 9" Ga. . . 9" Traverse . . 7" Ring . . Spools & Creel . . All Heanium Guides & K. O.

1—VAN. 70"—1951 PALMER

32 DRAPER 44" XD LOOMS

20 Harness Dobby—Center Filing Fork. Weaves up to 46" cloth.

10. U. S. REDRAWS . . .

52 SP. EACH—HI SPEED—SPINDLELESS
Hen. Tensions—1 lb. Cap.

3—ABBOTT AUTOMATIC QUILLERS LATE—60 & 100 SPINDLES
16—1953 FLETCHER TAPE LOOMS
2—S.S. 250 LB PADDLE DYE MACHINES
1—S.S. 150 LB PADDLE DYE MACHINE
1—WHITIN NOV. 200 SP. TWISTER—3" RING
2—HENRICI—ST. STEEL 2 COMP. WASHERS
2—HENRICI—ST. STEEL 3 COMP. WASHERS
2—SIPP EASTWOOD MAG. CONE CREELS

Sample 511 SAABA Machine

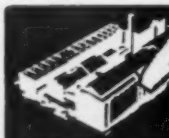
28 Spindles . . Like New Condition

20 DYE BECKS Stainless Steel—Open & Closed From 2 Ft. to 16 Ft. Wide From 32 to 60" Deep

24 REBUILT MODEL 50 CONERS

CALENDERS 1—V.V. 66"—20 TON
1—V.V. 60"—7½ TON

1958 TASLAN 60 SP. MACHINE
CONT. 1954 BLEACHING RANGE
WITH WIESNER-RAPP SATURATER AND BELCO S.S. J. BOX



Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

Gordon & Jordan Streets • HEmlock 4-9525 • Allentown, Pa. • Cable: RAB

ONLY PARTIAL LISTING . . . SUBJECT PRIOR SALES . . . SELECTED STOCK OFFERINGS

CIRCLE 404 ON READER SERVICE CARD

1—Werner 56" 15 Ton Padder
5—Werner—70" Dye Jiggs
1—Paterson 64" Tuber
1—Verduin 60" 40 ton hyd. calendar
2—12' Blickman enclosed dye becks
2—VV—60" Tensionless Tubers
1—Progressive 64" Examiner w/trumeter
1—VV 75" inspection machine
2—Werner—Dye Jiggs—58"
1—Vertical Set 18-130" SS cans 35 lb
1—Hinnekens 75" Boiloff Mach. #212

MAR-DAY TEXTILES
52-60 BERKSHIRE AVE. PATERSON 2, N. J.
MU-4-5122

CIRCLE 406 ON READER SERVICE CARD

FOR SALE

1—Morrison 60" Button Breaker
2—Textile 60" Scroll Breakers
2—Progressive 50" Tubers
1—P. & W. 46" Cloth Doubler
1—Open 50" Bleach Range

JAMES E. FITZGERALD
10 Purchase Street Fall River, Mass.
Tel. OS 8-5616

CIRCLE 407 ON READER SERVICE CARD

Spinning Frames—Completely Modernized

Available Now From Stock

65,000 spindles, 3" gauge, Whitin Model F and B
20,000 spindles, 3" gauge, Saco-Lowell (latest head)
15,000 spindles, 3¼" gauge, Whitin Model B
7,000 spindles, 3½" gauge, Whitin Model F and B
5,200 spindles, 3½" gauge, Saco-Lowell (latest head)
6,000 spindles, 3½" gauge, Fales & Jenks (latest head)
3,800 spindles, 4" gauge, Whitin Model B

Completely Modernized with:

Open Type Umbrella Creels
Latch Bobbin Holders
Suction End Collection
Double Apron High Draft System
Individual Drive Pulleys with Ball Bearings
Ball Bearing Tape Tension Pulleys
Ball Bearing Top Drive Spindles
High Speed Rings

Suitable for: Warp or Filling Yarns, Cotton or Synthetic Staple

Attractive Prices on all or any portion of these lots
Delivery and Erection Supervision Can Be Included

ROBERTS COMPANY, Sanford, N.C.

manufacturers of textile machinery

Contact Trade-In Dept.: M. C. Golden, SPring 4-8811

Export Dealer Inquiries also Invited

CIRCLE 405 ON READER SERVICE CARD

INDEX TO ADVERTISERS

An * indicates advertisers who have essential technical information on their products in the **IMPORTANT 1960 FACT FILE ISSUE**

*Adolff, Emil 49
Albion Industries Inc.... 168
Allied Chemical Corp.
Solvay Process Div.... 119
National Aniline Div..... 172
American Cyanamid Co... 141
*American Enka Corp..... 138
*American Moistening Co. 6
*American Viscose Corp.
Textile Fibers
Div. .....3rd Cover
Armstrong Cork Co....12, 13
50, 51
Ateliers Roannais de
Constructions Textiles 39
*Atkinson, Haserick & Co., Inc. 28

Bahnson Co., The.....16, 56
*Barber-Colman Co. 88
*Batson Co., Louis P..... 7
Bendix-Elmira
Eclipse Machine Div... 175
*Bristol Co., The..... 14

Celanese Corp. of America
Chemical Div. 105
*Clinton Corn Processing Co. 32
*Cocker Machine & Foundry Co. 24
Corn Products Co..... 23
*Crompton & Knowles Corp. 40, 41

*Dary Ring Traveler Co., The 176
Dayco Textile Products Co.
Div., Dayco Corp..30, 31
Deutscher Spinnereimaschinenbau, Ingolstadt.. 27
Diamond Crystal Salt Co. 106
Dinsmore Mfg. Co..... 170
*Draper Corp. 1, 145
*Duesberg-Bosson of America Inc. 176
DuPont de Nemours & Co. Textile Fibers 142

Eastman Chemical Products, Inc.
Chemicals Div. 117
Extremultus, Inc. 89

*Fairbanks Co., The..... 155
Fairbanks, Morse & Co... 153
Fancourt Co., W. F..... 129
Faultless Caster Corp.... 146
*Felters Co., The..... 150
Fiber Controls Corp..... 124
Fletcher Industries 152
*Foster Machine Co.
Electronics Sales Div.. 101
Foxboro Co. 10

*Garland Mfg. Co..... 166
Gaston County Dyeing Machine Co. 33
Gates Rubber Co., The... 35
*Geigy Dyestuff Div. of Geigy Chemical Corp... 111
Globe Dye Works Co.... 167
*Goodrich Chemical Co., B. F. 18
Goodyear Tire & Rubber Co.
Industrial Products Div. 8, 9

Heller & Co., Walter E.. 25
Herbert Products, Inc.... 177
Herr Mfg. Co., Inc..... 147
Hungerford & Terry, Inc.. 168

*Industrial Dryer Corp., The 122
*Ives Co., Inc., Loyal T.. 99

*Johnson Corp., The..... 177

Kay Machine Co..... 168
*Klauder Weldon Giles Machine Co. 122
Knitting Arts Exhibition 170

Laurel Soap Mfg. Co., Inc. 174
Leesona Corp. 42, 43
*Link-Belt Co. 29
Livingston & Haven, Inc. 171
Lunkenheimer Co., The.. 151
Luscher Bros., Ltd. 178

*Main, Inc., Charles T.... 177
M-B Products 171
Morton Salt Co..... 125

Nash Co., Inc., J. M..... 178
*National Drying Machinery Co. 130
National Starch & Chemical Co. 123
*National Vulcanized Fibre Co.
Kennett Div. 154
Nihon Spindle Mfg. Co., Ltd. 172

Pennsalt Chemicals Corp. 113
*Pneumafil Corp. 26
Procter & Gamble..... 124
*Proctor & Schwartz, Inc. 128

Raybestos-Manhattan Inc.
Manhattan Rubber Div. 38
Richmond Oil, Soap & Chemical Co. 126
*Robert & Co., Associates 2nd Cover
*Roberts Co. 2, 3
Rockwell-Standard Corp.
Air-Maze Div. 173
*Rohm & Haas Co..... 104
Royce Chemical ....4th Cover

*Saco-Lowell Shops
Textile Machinery Div.. 161
*Sargent's Sons Corp., C. G. 159
*Scholler Bros., Inc..... 102
*Scott Testers, Inc..... 160
Shell Oil Co..... 157
Signode Steel Strapping Co. 34
*Simco Co., The..... 156
*Sonoco Products Co..... 97
*Supreme Knitting Machine Co., Inc. 52, 53
Steel Heddle Mfg. Co..... 15
Stowe-Woodward, Inc. ... 133

Tennant Co., G. H..... 158
Texaco Inc. 11
Toledo Scale Corp.
Toledo Scale Div..... 148
Tompkins Bros. 169
*Torrington Co., The..... 48
*Turbo Machine Co..... 17

Union Asbestos & Rubber Co. Sturdi-Bilt Div.... 169
Union Bag-Camp Paper Corp. 36, 37
Union Carbide Chemicals Co.
Div. of Union Carbide Corp. 127
Uster Corp. 93

Verein Schweizerischer Maschinen-Industrieller 44, 45

Warner & Swasey Co..46, 47
West Indies Chemical Works, Ltd., The..... 156
Whitin Machine Works.. 95
162, 163, 164, 165
Wolf & Co., Jacques..... 112
Wood's Sons Co., T. B.. 149

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 179
EQUIPMENT
(Used or Surplus New)
For Sale 179-183

ADVERTISERS INDEX

Alliance Textile Machinery Corp. 180
Ambler Textile Machinery Co.. 181
Blank Co. A & M..... 182
Chicopee Mfg. Corp..... 179
Fitzgerald, James E..... 183
I P A Southern Inc..... 180
Industrial Machinery Co..... 182
Industrial Products of America. 180
Interstate Textile Equipment Co., Inc. 183
Mar-Day Textiles 183
Machinery Sales Corp..... 182
McDowell Associates Inc..... 179
Mohawk Valley Knitting Machinery Co. 181
Pawtucket Mill Supply Co..... 182
Pennsylvania Spool & Equipment Co. 182
Perry Equipment Corp..... 182
Rabinowitz & Sons, William.... 183
Republic Textile Equipment Co. 181
Roberts Co. 183
Salt, Jacob 182
Southern Textile Works..... 182
Stave & Kessler..... 182
Textile Auxiliaries Inc..... 179
Trans-American Spinning Mills, Inc. 181

Looking for More Information?

TEXTILE WORLD editors provide this Reader-Service Card so you can get more complete dope on things you read about in TEXTILE WORLD. Use the postcard attached below to find out more about DYES and CHEMICALS, EQUIPMENT and SUPPLY NEWS, NEW LITERATURE, SEARCHLIGHT opportunities, ADVERTISERS' LITERATURE, and REPRINTS from back issues. And you can get more data on ADVERTISED ITEMS, too, just by using this card.

Don't Forget . . .

. . . to write your name and address on the card—and your title and company affiliation, too. Then all you do is circle the key numbers that correspond to the numbers appearing on the Dyes and Chemicals, Equipment and Supply News, New Literature, Advertisers' Literature, or on whatever department you are interested in. Your next step—drop the card in the mail—there isn't any need to add stamps.

To Correct . . .

. . . your TEXTILE WORLD mailing address, just write your name and new address on the lines provided for that purpose on the postcard. And write clearly across the card: ADDRESS CHANGE. (Please add your old address.) Then mail the card. We'll make the change just as quickly as possible, so you won't have to wait for your TEXTILE WORLD.

ADVERTISEMENTS:				INSIDE FRONT COVER						INSIDE BACK COVER					BACK COVER			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	
109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	
127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	
250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	
268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	
286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	
304	305	306	307	308	309	310												
SEARCHLIGHT:			400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	
415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	
433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	
451	452	453	454	455														
EQUIPMENT AND SUPPLY NEWS:				E1		E2		E3		E4		E5		E6		E7		E8	E9
E10		E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23					
E24		E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37					
E38		E39	E40	E41	E42	E43	E44	E45	E46	E47	E48	E49	E50	E51					
E52		E53	E54	E55	E56	E57	E58	E59	E60	E61	E62	E63	E64	E65					
E66		E67	E68	E69	E70	E71	E72	E73	E74	E75	E76	E77	E78	E79					
NEW LITERATURE:				L1		L2		L3		L4		L5		L6		L7		L8	L9
L10		L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23					
L24		L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37					
L38		L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51					
L52		L53	DYES & CHEMICALS:			D1		D2		D3		D4		D5		D6		D7	D8
D9		D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22					
D23		D24	ADVERTISERS' LITERATURE:			A350		A351		A352		A353		A354		A355		A356	A357
A358		A359	A360	A361	A362	A363	A364	A365	A366	A367	A368	A369	A370	A371					
A372		A373	A374	A375	A376	A377	A378	A379	A380	A381	A382	A383	A384	A385					
REPRINTS:			A1		A2		A3		A4		A5		A6		A7		A8		A9
A10		A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23					
A24		A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37					
A38		A39	A40	A41	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51					
A52		A53	A54																

Name..... Title.....

Mill..... Address.....

Home Address.....

City..... State..... April 1961 • 2

ADVERTISEMENTS:				INSIDE FRONT COVER						INSIDE BACK COVER					BACK COVER			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	
109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	
127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	
250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	
268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	
286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	
304	305	306	307	308	309	310												
SEARCHLIGHT:			400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	
415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	
433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	
451	452	453	454	455														
EQUIPMENT AND SUPPLY NEWS:				E1		E2		E3		E4		E5		E6		E7		E8	E9
E10		E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23					
E24		E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37					
E38		E39	E40	E41	E42	E43	E44	E45	E46	E47	E48	E49	E50	E51					
E52		E53	E54	E55	E56	E57	E58	E59	E60	E61	E62	E63	E64	E65					
E66		E67	E68	E69	E70	E71	E72	E73	E74	E75	E76	E77	E78	E79					
NEW LITERATURE:				L1		L2		L3		L4		L5		L6		L7		L8	L9
L10		L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23					
L24		L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37					
L38		L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51					
L52		L53	DYES & CHEMICALS:			D1		D2		D3		D4		D5		D6		D7	D8
D9		D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22					
D23		D24	ADVERTISERS' LITERATURE:			A350		A351		A352		A353		A354		A355		A356	A357
A358		A359	A360	A361	A362	A363	A364	A365	A366	A367	A368	A369	A370	A371					
A372		A373	A374	A375	A376	A377	A378	A379	A380	A381	A382	A383	A384	A385					
REPRINTS:			A1		A2		A3		A4		A5		A6		A7		A8		A9
A10		A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23					
A24		A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37					
A38		A39	A40	A41	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51					
A52		A53	A54																

Name..... Title.....

Mill..... Address.....

Home Address.....

City..... State..... April 1961 • 1

Good Ideas—Your Best Bet for Lower Costs

You'll find lots of good ideas in TEXTILE WORLD reprints—special copies of outstanding articles from past issues. Below is a partial list of titles now available. To get those you want, circle the appropriate number on the other side of this Reader-Service Card, drop the card in the nearest mailbox. We'll fill your order promptly—and bill you later. If you prefer, put the card in an envelope and enclose your check. Prices quoted below are for single copies. Quantity prices on request.

MANUFACTURING

A-3 Preparation and Bleaching—a Refresher $1.25

A-4 The New Resins for Treating White Cotton $1.00

A-5 Cotton Crushproofing—How It's Done Today $1.00

A-26 Man-Made-Fiber Table—1960 Supplement $1.00

A-7 Man-Made-Fiber Table—1959 Edition $1.00

A-9 Metallic-Yarn Wet-Processing Guide ..... .50

A-10 Here's a Quick Way to Identify Fibers ..... .50

A-11 Cotton-Fiber Table ..... .50

A-12 How to Reduce Card Waste ..... .50

A-13 Report on Nonwoven Fabrics, 1956 ..... .50

A-21 Building-Material for Plant Construction ..... .25

A-30 Fiber Blend Chart $1.00

MANAGEMENT

A-31 Electric Power in Textiles: 1961 ..... .35

A-16 Tips That Will Make You a Better Manager ..... .50

A-17 Your Problem Employees: 1. How to Spot Them—2. How to Handle Them ..... .50

A-18 What Superintendents Expect of Overseers ..... .25

A-19 How to Measure and Compare Mill Performance ..... .25

A-22 Integrated Cost Reduction for Your Mill ..... .35

A-23 What to Do About Those Business Records ..... .35

A-24 Key Facts You Should Know About Today's Traveling Cleaners ..... .50

A-25 Preventive Maintenance—Why You Need It, What It Can Do for You ..... .35

A-32 Rules of Successful Committeemanship ..... .35

A-29 Employee Attitude Surveys ..... .35

A-28 "Systems Approach" Management ..... .35

FIRST CLASS
Permit No. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

Postage Will Be Paid By—

TEXTILE WORLD

330 W. 42nd Street

NEW YORK 36, N. Y.

McGraw-Hill Publishing Co., Inc.

FIRST CLASS
Permit No. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

Postage Will Be Paid By—

TEXTILE WORLD

330 W. 42nd Street

NEW YORK 36, N. Y.

McGraw-Hill Publishing Co., Inc.

Now Available:

TEXTILE WORLD'S 1960 Editorial Index

Circle A-54 on Reader Service Card

Our Modified Rayon Fibers are Revolutionary!

The contrast between Avisco® rayons of a few years ago and Avron,® Avril® and Avlin® is about as great as the difference between the old DC-3 airliners and the Boeing 707 Jets. Yet our scientists and chemists identify them only as modified rayons!

Those who have seen the performance and appearance improvements that these Avisco rayons have given fabrics and apparel say that the results are a little short of spectacular.

Here is a run-down of some of the more important characteristics of these vital new rayon fibers:

AVRON *a new high strength rayon fiber which has 60% greater wet strength, 30% greater dry strength than any previous Avisco rayon fiber. It's twice as abrasion resistant as regular rayon. Perfect for fabrics that need tensile strength. Improves the body, hand and comfort of many types of fabrics. Widely used alone or in blends.* **AVRIL** *a new high performance rayon that can actually be permanently pre-shrunk. A perfect blending fiber. Its great strength and stability make it ideal for both apparel and home furnishing fabrics.* **AVLIN** *a new multicellular rayon fiber created to be used only in blends. Creates new firmness and bulk in fabrics due to its self-bonding characteristics.*

Many leading converters, cutters, retailers are building lines and promotions around these new fibers. In case you haven't received all the information on today's Avisco rayons, get it today!

AVISCO® RAYON

AMERICAN VISCOSE CORPORATION — 350 Fifth Avenue, New York 1, N.Y.

Discover real comfort with today's Avisco rayons

WHERE CONSISTENT PERFORMANCE IS A MUST...

Modern continuous dyeing and stripping techniques are dependent on precise measurements. There's no room for variations in performance of hydros. That's why more and more dyehouses everywhere are specifying VATROLITE for reducing vat colors and stripping cellulosic fabrics.

Royce's elaborate system of continuous testing through every phase in the manufacture of VATROLITE is insurance that performance of this powerful reducing agent will remain constant from shipment to shipment.

Get all the facts: Write us today, or phone GEneva 8-5200 to have a trained Royce representative call.

Royce

ROYCE CHEMICAL CO.

CHEMICAL COMPANY
CARLTON HILL, NEW JERSEY